

The Mining Journal.

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper and for Transmission Abroad.]

No. 2366.—VOL. L.

LONDON, SATURDAY, DECEMBER 25, 1880.

[WITH SUPPLEMENT.] PRICE SIXPENCE PER ANNUM, BY POST £1 4s.

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.
Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or part:—
50 Aberllyn, 12s. 6d. 100 Herodsfoot, 16s. 3d. 25 Ruby, 2s.
25 Almada, 9s. 6d. 50 Hingston Down, £1 6s. 20 Richmond, £15 1/2.
75 Carnarvon Cop., 16s. 50 Javali, 6s. 10 Roman Grav., £3 17 6
10 D'Eresby Cons., £3 1/2. 25 Leadhills, £2 13s. 9d. 50 S. Indian Gold, £1 1/2.
50 Devon Consols. 50 Marke Valley. 20 So. Condurrow, £11.
50 East Crebhor, 17s. 50 North D'Eresby, 25s. 25 South Darren, £2 3 9
25 East Caradon, £1 1/2. 75 Nour. Monde, 26s. 3d. 50 So. E. Wynad, £1 15s.
20 E. Roman Grav., 14s. 70 N. Penstruthal, £2. 100 S. Penstruthal, 18s. 9d.
20 East Van, £1 17s. 6d. 50 Pandora, 16s. 60 Tankerville Gt. Con.
50 Flagstaff, £1 13s. 9d. 50 Pen-yr-Orsedd, £1 1/2. 30 Trevine Con., 22s. 6d.
50 Frontino, 45s. 50 Port Phillip, 11s. 6d. 30 West Godolphin, £2 1/2.
50 Glenrock, £1 11s. 3d. 50 Prince of Wales, 17s. 6 50 West Phoenix, £2.
50 Glenrov, 12s. 3d. 75 Parys Copper, £1 2 6d. 40 Wheel Crebhor, £4 1/2.
25 Grogwinion, 43s. 75 Pestarena 7s. 6d.

* * * SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

SPECIAL BUSINESS in North D'Eresby Mountain, West Godolphin, and Wheel Crebhor at close prices.

RAILWAYS—SPECIAL BUSINESS.
FOREIGN BONDS—SPECIAL BUSINESS.
AMERICAN STOCKS AND SHARES—SPECIAL BUSINESS.
Fortnightly accounts opened on receipt of the usual cover in these and all Stock Exchange Securities.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

IMPORTANT TO SHAREHOLDERS AND INVESTORS.

There is still a rush for FOREIGN GOLD MINES, to the neglect of SOUNDER INVESTMENTS nearer home, but signs of a coming reaction are not wanting, and it may be safely predicted that the present mania must, sooner or later, result in disappointment and loss to the majority of those persons who place their money in such schemes at the extravagant rates now ruling. On the other hand, it cannot be denied that a very small proportion of the amount thus lavishly subscribed, if properly and honestly devoted to the working and development of SOUND BRITISH MINES, could hardly fail to produce very profitable results within a comparatively short period. Reference is here made more particularly to TIN Mines, for which there is an excellent prospect in the immediate future. The market for this metal is steady, and there is every probability that a considerable advance will take place early in the New Year; but, with Tin even at its present price, good profits can be made and maintained. Investors will, therefore, do well to turn their attention in the direction here indicated, as, by a judicious purchase at present quotations, they may not only ensure good dividends, but a substantial profit on their outlay within the next few months. The following Mines are strongly recommended for Safe and Profitable Investment, and shares should be secured at once:—

WHEAL GRENVILLE.—This is one of the best mines in Cornwall, and will shortly occupy a prominent position. A dividend will be declared at the next meeting (in January), and regular and increasing returns may be confidently relied upon.

WEST GODOLPHIN.—This valuable property is about to be vigorously re-worked under the same management as Wheal Grenville. Profitable returns may be confidently expected early in the coming year, and shares are likely to advance 100 or 200 per cent.

WHEAL PEEVOR.—This is one of the best Dividend Mines in the List, and, at present price, will pay an Investor over 13 per cent. per annum. A Dividend of £1 per share has been declared this week.

WEST PEEVOR (adjoining Wheal Peavor, on the same lodes).—This mine is rapidly approaching a Dividend position, and will probably prove as great a success as its neighbour.

NEW PEEVOR (adjoining West Peavor, on the same lodes).—This is a comparatively young mine, but possessing very good prospects, and the shares are worth buying for a rise.

WHEAL BOYS.—For particulars of this property, see prospectus on page 1475. These shares are particularly recommended for an early and substantial rise in value.

N.B.—The last Three Mines are all under the same excellent management and management as Wheal Peavor.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
50 Almada, 9s. 6d. 25 Frontino, 45s. 100 Pen-yr-Orsedd, 22s. 6d.
100 Bodidris. 50 Flagstaff, 27s. 50 Parys Copper, 22s.
75 Blue Tent, 36s. 100 Glenrov, 12s. 50 Prince of Wales. 50
5 Cape Copper, £42. 5 Great Laxey. 15 Richmond, £16 1/2.
100 Carnarvon. 50 Hingston, 27s. 6d. 20 Ruby, £6 1/2.
2 Carn Brea. 100 Indian Glenrock, 28s. 6 10 Roman Gravels. 37s.
50 Colorado, £2 1/2. 100 La Plata. 100 South Indian, 37s.
25 Canada Copper. 25 Leadhills, £2 1/2. 10 South Frances. 5
10 Copiapo, £11 8s. 9d. 20 Mellencar, £2 1/2. 10 Tincroft. 5
50 Denbighshire Cons. 10 Minera. 50 Tankerville Cons., 20s.
40 Derwent, £2 1/2. 40 Marke Valley, 36s. 6d. 10 Wh. Grenville, £10 1/2.
100 Don Pedro, 13s. 10 Mona, £15. 100 Wheal Jane, 15s.
3 Dolcoath. 50 No. Herodsfoot, 11s. 100 Wheal Sisters, £2 1/2.
10 Devon Consols, £15 1/2. 20 North Bury. 75 Wh. Jewell, 13s. 6d.
25 Eberhardt, £2 3s. 9d. 100 Nouveau Monde, 26s. 25 West Phoenix. 5
50 E. Roman Grav., 15s. 6 50 New Peavor, £2 1/2. 50 W. Godolphin, £2 1/2.
40 East Caradon. 75 Port Phillip, 12s. 100 Yorke Peninsula, 7s. 6
5 East Pool. 75 Port Nigel. 100
20 Emma, £3 1/2. 50 Panucillo, £6 1/2.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

WILLIAM HENRY BUMPUS, SWORN BROKER.
OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

MR. THOMAS THOMPSON, JUN., STOCK BROKER,
16, ST. SWITHIN'S LANE, E.C.
Mr. Thompson transacts business in every species of Stock Exchange and Mining Securities.
Mr. Thompson affords reliable information to investors, and can give, when desired, a list of first-class Stocks and Shares, yielding 4 to 10 per cent. dividends upon present prices.
Mr. Thompson's weekly Circular may be had on application.

MR. JOHN RISLEY, STOCK AND SHARE BROKER,
38, CORNHILL, LONDON E.C.
ESTABLISHED 20 YEARS.
WEST CARADON, PARYS, and NEW WEST CARADON specially recommended.
SHARES BOUGHT OR SOLD ON COMMISSION.

MESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS,
85, GRACECHURCH STREET, LONDON, E.C.
ESTABLISHED 1861.
BANKERS: LONDON AND WESTMINSTER, Lothbury; and BARCLAY, BEVAN, and CO., Lombard-street, E.C.

BRITISH AND FOREIGN MINING OFFICES.

MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET, LONDON, E.C.
BANKERS: THE ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.'S
BRITISH AND FOREIGN MONTHLY MINING NEWS
—STOCK AND SHARE INVESTMENT NOTES—MINES,
MINERALS, AND METAL MARKETS—SHARE LIST,
No. 825, VOL. XV., for DECEMBER month, will be sent to customers on application early in January.

Annual Subscription..... 5s. | Single Copy..... 6d.

MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS, E.C.

MR. ALFRED E. COOKE,
DEALER IN BRITISH AND FOREIGN STOCKS AND SHARES
OF EVERY DESCRIPTION.
76, OLD BROAD STREET, LONDON.
ESTABLISHED 1853.

SPECIAL NOTICE.

In consequence of the CHRISTMAS HOLIDAYS, the INVESTORS' GAZETTE will not be published to-day. EVERYONE who desires to secure PROFITABLE INVESTMENTS should send for the INVESTORS' GAZETTE, to be published on 31st instant. SPECIAL NEW YEAR'S NUMBER. Post free three stamps. Published by

ALFRED E. COOKE,
76, OLD BROAD STREET, LONDON.

(Over 14 years at the above offices, adjoining the Stock Exchange, with which they are in DIRECT TELEGRAPHIC COMMUNICATION.)

STOCKS AND SHARES,
FOREIGN BONDS, TELEGRAPHS, TRAMWAYS, RAILWAYS, AND
OTHER LEADING SECURITIES.
MR. JAMES STOCKER, STOCKBROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1848.

Business transacted in all Stock Exchange Securities. British and Foreign Mines for cash or fortnightly accounts opened on receipt of the usual cover.
BANKERS: LONDON AND WESTMINSTER.

BRITISH AND FOREIGN MINES, RAILWAYS,
TELEGRAPHS, INSURANCES, AND EVERY DESCRIPTION OF
SECURITY DEALT IN, at net prices, cash or for the account. Mines
inspected in any part of the United Kingdom for a small charge. No charge
for recommendations to ordinary customers, but to those who have not dealt
with Mr. R., a charge of One Guinea is made for the Select List of Mines
good for Investment or Speculation. Mr. REYNOLDS'S opinions are unbiased
by proprietorship or otherwise, and his facts are gathered at considerable
trouble and expense.

Mr. REYNOLDS is also a buyer and seller of Shares in the leading Mines
such as Carn Brea, Cook's Kitchen, East Pool, West Basset, South Frances,
West Kitty, North Bury, Wheal Peavor, West Peavor, New Kitty, &c.

Apply to—**JOHN B. REYNOLDS, STOCK AND SHARE DEALER,**
37, WALBROOK, LONDON, E.C.
ESTABLISHED 23 YEARS.

BANKERS: LONDON JOINT STOCK BANK, Princes-street.

REYNOLDS'S PAMPHLET

On Buying and Selling, and How to Make Money Safely, is now ready. Forwarded gratis on application to JOHN B. REYNOLDS, 37, Walbrook, London, E.C.

WEST KITTY.—Mr. REYNOLDS advises the purchase of these Shares, and BUYERS or SELLERS can find a ready market on application to him either personally, by telegram, or by letter.

FERDINAND R. KIRK, 5, BIRCHIN LANE,
LONDON, E.C.
FORTNIGHTLY ACCOUNTS opened, on receipt of the usual "cover," in
Railways Home and Foreign, Mining Shares, Foreign Bonds, and certain Miscellaneous Securities.

"THE WEEK."—A SEPARATE EDITION from that which appears in the Mining Journal is published every Wednesday evening, containing "Notes and Hints on the Stock Markets," with Closing Prices. May be had on application.
BANKERS: LONDON AND WESTMINSTER, Lothbury.

EKINS AND CO., STOCK AND SHARE DEALERS
14, QUEEN VICTORIA STREET, LONDON, E.C.
Special information respecting Tin, Lead, and Copper Mines.

PENNINGTON AND CO., SWORN BROKERS,
3, ROYAL EXCHANGE BUILDINGS, E.C.
Transact business in every description of Stocks and Shares.
ESTABLISHED 1869.—BANKERS: ALLIANCE.

TREVINE CONSOLS.—We have this week returned from a visit to this mine, and most strongly advise the immediate purchase of shares at 22s. 6d. They will, in our opinion, have a big rise very shortly.
SPECIAL BUSINESS in Devonport and Tiverton and Gray's Brewery shares.

MESSRS. THOMSON AND CO.,
STOCK AND SHARE DEALERS.
44, THREADNEEDLE STREET, E.C.
BANKERS: ROYAL EXCHANGE.

Business transacted in every description of Stocks and Shares.
TREVINE CONSOLS.—The rich lode discovered close to surface continues, and is improving: 40 tons of copper ore has been sampled this week. Shares should be bought at once. Price about 20s. See report.

HORACE J. TAYLOR, STOCK AND SHARE DEALER,
(Late of the PORT PHILLIP AND VICTORIA [London] MINING COMPANIES, Limited.)
38, GREAT ST. HELEN'S, LONDON, E.C.

Business transacted in every description of Stocks and Shares. Fortnightly accounts opened on receipt of usual cover.
West Chiverton, West Lisburne, and East Lovell should be secured for an important rise.
BANKERS: CENTRAL BANK OF LONDON (Limited).

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C.
Can sell the following SHARES at prices annexed:—

100 Almada, 10s.	50 English-Austra., 16s. 6	20 Panulicillo.
25 Brazilian Gold, 20s.	25 Flagstaff, £1 1/2.	40 Prince of Wales, 18s.
10 Bwlch United.	20 Frontino, 45s.	75 Port Phillip, 10s. 6d.
25 Carnarvon, 16s.	25 Glenrock Gold, £1 1/2.	60 Pestarena, 8s.
50 Colorado, £2 1/2.	25 Great Holway.	50 Rossa Grande, 4s. 6d.
100 Cambrian, 18s.	100 Grey's Brewery, with div., £4 7s. 6d.	20 Ruby Silver, £6 1/2.
100 Chontales, 5s. 6d.	20 Herodsfoot, 17s. 6d.	10 Richmond, £16 1/2.
25 Devon Gt. Un., £2 1/2.	20 Hingston, £1 8s. 9d.	40 Rashedig Tin.
50 Don Pedro, 14s.	25 La Plata, £2 1/2.	50 So. E. Wynad, £11 1/2
40 Devala Moyer, £2 10s.	25 Lady Ashburton, 21s. 3	40 South Crebhor, 30s.
75 Devon and Tiverton Brewery, £4 5s.	15 Leadhills, £2 1/2.	20 S. Indian Gold, £2 2s.
10 Devon Consols, £15 1/2.	20 Marke Valley, £1 13 9	50 Tankerville, 14s.
20 Eberhardt, £2 5s.	10 Minera, 49s.	25 West Caradon, £2 1/2.
100 Exchequer, 7s. 3d.	20 North Alfred.	60 West Crebhor, 8s.
20 East Caradon, £1 16 3	15 New Quebec, £5 16 3	30 West Lisburne.
10 East Lovell, £4 12s. 6d	50 Nouveau Monde, 26s. 3	20 W. Chiverton, 30s.
15 Emma, £3 1/2.	50 Wheal Jane, 16s. 6d.	20 Wheal Crebhor, £4 1/2.
	50 Parys Corpor., 22s.	

THE "DIFFERENTIAL" PUMPING ENGINE
(DAVEY'S PATENT),
FOR

DRAINING MINES, WATER SUPPLY OF TOWNS, IRRIGATION,
SUPPLYING DOCKS, PUMPING SEWAGE, and GENERAL
PUMPING PURPOSES.

HATHORN, DAVEY, AND CO.,
LEEDS.

HATHORN, DAVEY, and Co. have Patterns of "Differential" Engines of all sizes, from 5 to 500-horse power, and have facilities for supplying very powerful Engines and Pumps at a short notice.

See Illustrated Advertisements every alternate week.

MR. CHARLES THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MR. ALFRED THOMAS,
MINING AGENT, AND STOCK AND SHARE DEALER,
10, COLEMAN STREET, LONDON, E.C.

SOUTH WHEAL CREBOR.—Mr. ALFRED THOMAS has business both as buyer and seller in these shares.

DENBIGHSHIRE CONSOLIDATED.

Having had several enquiries respecting the late discovery of lead, I am in a position now to corroborate the official report. The lode will produce fully 10 tons of lead per fathom, being 3 ft. wide, of solid galena. Further particulars furnished upon application, and shares supplied at closest market price.

Just published.

MINING INVESTMENTS.

"What to Select, and What to Avoid," by ALFRED THOMAS, 10, Coleman street, London, E.C. Will be forwarded on receipt of 12 stamps.

ESTABLISHED 1852.

HENRY GOULD SHARP
STOCK AND SHARE BROKER, 42, POULTRY, LONDON, E.C.
BANKERS—London and County Bank, Lombard-street, London, E.C.

MR. EDWARD ASHMEAD, 2, DRAPER'S GARDENS,
LONDON, E.C.
MINING SECRETARY, AUDITOR, AND ACCOUNTANT.

MR. E. J. BARTLETT, BRITISH AND FOREIGN STOCK
AND SHARE DEALER, No. 30, GREAT ST. HELEN'S, LONDON, E.C.

EAST LOVELL.—The rise in price has commenced. Further improvement expected. Special business at close prices.

MR. ALEXANDER DAVIDSON,
STOCK AND SHARE DEALER,
139, LEADENHALL STREET, LONDON, E.C.
OFFERS the FOLLOWING SHARES FOR SALE at the NETT PRICES AFFIXED, provided they are not sold, withdrawn, or price advanced:—
30 Penhalls £ 1 13 9 | 40 West Kitty £ 2 1 6
50 Polrose (cheap) 1 1 6 | 110 Wheal Jane (cheap) 0 16 3
50 Carnarvon £ 0 16 9 | 2 South Caradon £ 2 10 0
65 East Caradon 1 13 9 | 100 South Wheal Crebhor 1 7 0
100 East Crebhor 0 17 6 | 40 West Caradon 2 5 0
80 Marke Valley 1 17 3 | 125 West Phoenix (cheap) 1 16 3
74 Mona (safe) 14 17 6
175 Bodidris (cheap) £ 0 18 3 | 100 South Darren £ 2 1 3
26 Derwent (cheap) 2 2 6 | 180 Tankerville Great Con-
95 Glenroy (cheap) 0 11 3 | sals (£1 paid) 0 15 0
30 Grogwinion 3 1 3 | 15 Van 16 10 0
120 Herodsfoot (cheap) 0 16 3

N.B.—Less prices might be accepted in some cases if offers were made.

SPECIAL NOTE.—Any of the above shares will be sold for payment end of January, 1881, on 25 per cent. of the purchase-money being paid on purchasing.

MR. W. B. COBB, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C.
Business transacted in every description of Stocks and Shares.
Special Business in Potosi, Bwlch United, West Lisburne, and East Lovell.
BANKERS: ALLIANCE BANK (Limited).

MR. CHARLES J. SIMS,
MINING AGENT, STOCK AND SHARE DEALER,
2, DRAPER'S GARDENS,
LONDON, E.C.

MR. F. REED WILSON,
DEALER IN STOCKS AND SHARES,
30, FINSBURY CIRCUIS, E.C.

Mr. WILSON begs to direct attention to the fact that he has, at the instance of numerous correspondents, opened an agency for the purchase and sale of Stocks and Shares.

Mr. WILSON has had a life-long initiation into the mysteries of British and Foreign Mines, both as a large holder of shares and manager of companies, and he thinks he is qualified by long and dear experience to give sound and honest advice as to investments in such securities.

All transactions must be for cash, or fortnightly settlement, and speculative bargains in mining shares will not be entertained without substantial cover.

Mr. WILSON subjoins a list of mines with whose intrinsic or prospective merits he is intimately acquainted.

East Crebhor.	North Herodsfoot.
East Van.	Parys Copper Corporation.
Derwent.	Roman Gravels.
Leadhills.	South Caradon.
Lead Era.	Wheat Basset.
Morfa Du.	Wheal Grenville.
Brazilian Gold.	Frontino and Bolivia.
Colombian Hydraulic.	Richmond.
Consolidated.	Ruby.
Devala Moyer.	South East Wynad.
Emma.	South Indian.

The following Shares are strongly recommended for a rise:—North Herodsfoot, Wheal Basset, La Plata, Nouveau Monde, West Caradon, Consolidated, Parys Copper, Morfa Du, and Roman Gravels, in all of which Mr. WILSON has special business.

Price One Shilling.

MINING SHARES, AND HOW TO DEAL IN THEM.
Published for the Author at the MINING JOURNAL Office, 26, Fleet-street, E.C.

FRANCIS FRANCIS,
CORN EXCHANGE CHAMBERS, CHESTER.
Has SPECIAL BUSINESS in HALKYN DISTRICT DRAINAGE, RHYDALUN, RHOBESMOR, NORTH HENDRE, and PEN-YR-ORSEDD.
Also, in PITANGUI (Gold), BRAZILIAN GOLD MINES, SANTA BARBARA, and WEST FRONTINO.

MR. JOHN L. M. FRASER,
(Fourteen Years at the Great Miners' Mines)
CONSULTING MINING ENGINEER, &c.,
GREENFIELD HOUSE, WREXHAM.

Having VISITED the Mining Districts of MINERA, LLANARMON, MOLD, D'ERESBY, and BRITISH SILVER-LEAD. Reports can be had at moderate charges.

ON SALE—HORIZONTAL, VERTICAL, and PORTABLE WINDING and PUMPING ENGINES, LIFTS OF PUMPS, PIT HEADS, SAW BENCHES, MINING STEEL, a complete SET of GOLD MINING PLANT, &c. Enquiries courted.

GOLD, SILVER-LEAD MINE, LEASES, with MACHINERY, also LEAD SMELTING and DESILVERISING WORKS ON SALE or TO LET. Full particulars on application.

WIRE ROPES. JOHN AND EDWIN WRIGHT

PATENTERS.



ESTABLISHED 1770.

MANUFACTURERS OF EVERY DESCRIPTION
OF IMPROVED

Patent Round and Flat Wire Ropes

From the very best quality of Charcoal and Patent Steel Wire. Galvanised Wire, Ropes for Ships' Rigging, Galvanised Signal and Fencing Strand, Copper Rope, Lightning Conductors, Colliery Ropes and Steam Plough Ropes made from the best Patent Improved Steel Wire.

PATENT ROUND AND FLAT HEMP ROPES,
Hemp, Flax, Engine Yarn, Cotton Waste, Tarpauling, Oil Sheets, Brattice Cloth, Wagon Covers, &c., &c.

UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.

UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM.

CITY OFFICE—No. 5, LEADENHALL STREET, E.C.

All communications to be forwarded to the BIRMINGHAM ADDRESS.

JOSEPH FIRTH AND SONS' New Patent Brick-making Machine

Embraces the following advantages—viz.:

Simplicity, strength, and durability. Compactness and excellence of mechanical arrangements, large producing capabilities, moderate cost.

It makes two bricks at once, and will make 2,000 to 14,000 plastic pressed bricks per day, hard enough to go direct to the kiln without drying; or it will make the bricks thoroughly plastic if required. For works requiring a machine at less cost the machine is made to turn out one brick at once, and is capable of producing 8000 bricks per day.

The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.

[See Illustrated Advertisement every alternate week.]



PARIS, 1875.



LONDON, 1873.



FALMOUTH, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE for the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10, 28'30, 27'10, 28'40, 28'70 metres. Total advance of south heading during January was 121'30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL; and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them value unapproached by any other system of Boring Machine.

THE MCKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUNNELLING, QUARRYING, AND SUB-MARINE BORING.

The MCKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical devices. They contain the fewest parts—have no weak parts—act without SHOCK upon any of the operating parts—work with a lower pressure than any other Rock Drill—may be worked at a higher pressure than any other—may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines—will give the longest feed without change of tool—work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL, IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

McKEAN AND CO.
ENGINEERS

5, RUE SCRIBE, PARIS

MANUFACTURED FOR McKEAN AND CO. BY

MESSRS P. AND W. MACLELLAN, "CLUTHA IRONWORKS, GLASGOW."

ESTABLISHED 1852.

SYBRY, SEARLS, AND COMPANY,

MANUFACTURERS OF THE

CELEBRATED MINING STEEL, BRANDED CAST STEEL FOR TOOLS, SHEAR, BLISTER, AND SPRING STEEL.

Cast Steel Drills.
Solid Steel Hammers.
Steel Picks.
Steel Wedges.

Saws.
Files.
Wagon Springs.
Shovels.

Anvils.
Vices.
Bellows.
Engineers' Tools.

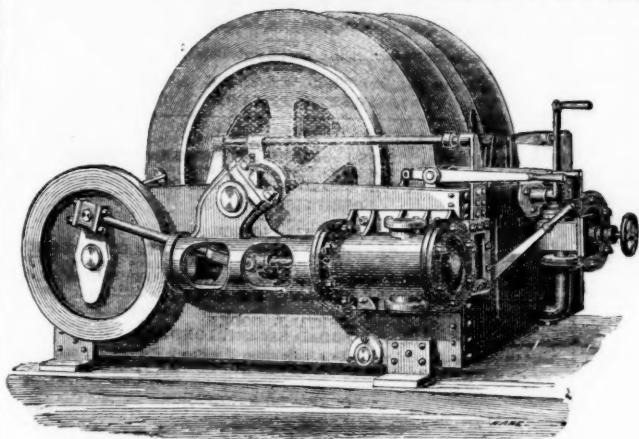
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STEVENS' UNDERGROUND WINDING ENGINE,

DESIGNED FOR USING COMPRESSED AIR OR STEAM.

SIMPLE, COMPACT, PORTABLE.

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ENGINEERS, MAKERS OF PUMPING AND WINDING MACHINERY, AND FORGINGS OF EVERY DESCRIPTION.

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Agents for the six Northern Counties—

TANGYE BROTHERS, ST. NICHOLAS BUILDINGS,

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Export Orders promptly attended to.

PERFORATORS, WIRE WEAVERS, AND GENERAL IRONMONGERS,

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Millimeter holes perforated in sheet-copper, brass, IRON, steel, and zinc.

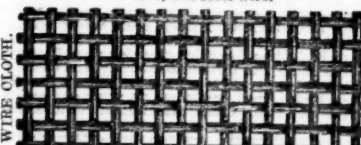


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Manufacturers of Stamps-Grates, Sieves, and Riddles, for Mining and other purposes, by Self-acting Steam Machinery.

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Awarded by the
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SIEVES AND GRATES,
Shown at the Annual Exhibition,
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Lineal holes per inch woven in copper, brass, iron, and steel wire.



JIGGER-BOTTOMS AND CRUSHER SIEVES.

SPECIALITY.—Thick Copper, Brass, Zinc, and IRON Perforations, Classifying-Sieves, Pierced Pulveriser and Stamps-Grates up to 289 holes to the square inch, Copper-bottom "Tinsifts," Spigot and Faucet Zinc Air-pipes, Powder Charges, &c.

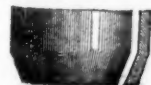
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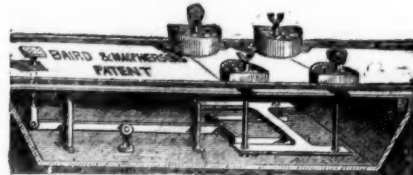


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With 3 Cast Steel
up to 3½ feet,
Freestone,
PRICE, 30s.

RATCHETS,
Drills to Bore
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Limestone, &c.,
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BAIRD'S IMPROVED
SOLID MOULDED
GUTTA PERCHA
PUMP BUCKETS,
Price, 3s. 9d. per lb.



BAIRD AND MACPHERSON'S PATENT TUB GREASER.

TO HEADS OF FAMILIES AND PERSONS FURNISHING.

THOMPSON AND CO.

SUPPLY

THREE PARCELS OF CROCKERY,

AS UNDER:—

No. 1.—One DINNER SERVICE, Marone, Emerald, Blue, or Pink and Gold, for Twelve Persons; one BREAKFAST SERVICE, same choice of Colours and Gold; one TOILET SET, with Slop Jar and Sponge Tray, same choice of Colours and Gold. FREE ON RAIL FOR £10. Quotations for goods of higher quality on application.

No. 2.—One DINNER SERVICE, Ruby, Emerald, or Blue and Gold; one TEA SERVICE (China), same choice of Colours and Gold; one TOILET SET, same choice of Colours and Gold. FREE ON RAIL FOR £2 5s.

No. 3.—One DINNER SERVICE, Emerald or Blue, not Gilt; one TEA SERVICE (Earthenware), ditto ditto; one TOILET SET ditto ditto; one SET JUGS, ditto ditto. FREE ON RAIL FOR £1 5s.

The Goods are of sound quality and sterling value, and the difference in price from what is usually charged in shops is the cost to the public of retail profits and credit.

Letters to THOMPSON AND CO., STOKE-ON-TRENT.

Cheques crossed Manchester and Liverpool District Bank, Burslem.

Wheal Boys, Redruth.

In 3000 Shares.

ON THE COST-BOOK SYSTEM.

UNDER THE SAME PURSERSHIP AND MANAGEMENT AS WHEAL PEEVOR AND WEST PEEVOR.

BANKERS—THE CORNISH BANK (LIMITED), REDRUTH.

The Mine is situated in the parish of Redruth, and is bounded on the north by Wheal Peavor, on the east by Treskerby and Peavor Consols Mines, and on the west by West Wheal Peavor and Wheal Prussia, and is consequently almost surrounded by those well-known mines. The entire district is rich in mineral wealth. The present profits at Wheal Peavor are from £10,000 to £12,000 per annum on an outlay of less than £23,000. West Wheal Peavor on an outlay of less than £6000 is commanding a market value of £50,000, and Wheal Prussia, although the company has only been recently formed, is rapidly rising in value. The lodes of Wheal Boys are the same as of Treskerby Mine, and are eight in number, from which minerals of the value of £589,468 were extracted during the last working of the mine ending in 1828. Of this large amount a considerable proportion was divided amongst the fortunate shareholders.

For some three years past the operations at Wheal Boys have been confined to exploring the mine at and about the deep adit level (50 fathoms from surface), where an important discovery of tin has been made on one of the lodes only a short distance from the lodes worked on by the old miners some 50 or 60 years since.

The objects of the present company are to fully explore the mine in depth by sinking the present deepest shaft, which is from 40 to 50 fms. below the deep adit, and to cross-cut the entire sett from north to south. For this purpose a 50-inch cylinder pumping-engine has been purchased on reasonable terms, and is being erected on the mine, and there are ample funds in hand not only to carry on all the necessary operations for the next six months, but also to pay for the engine and other plant. During this time it is fully expected that considerable quantities of tin will be raised and sold from the shallow workings already referred to. The lode recently cut is believed to be in entirely whole ground, and is, therefore, of great importance.

Attention is called to Capt. White's report of the mine, which will be found annexed.

This is in all respects a thoroughly sound property, possessing every element likely to conduce to great success at an early date, and, as such, it is confidently recommended to intending investors and the public generally.

The present price of the shares is £3 to £3 10s.

Application for Shares (of which only a limited number are for sale) should be made at once to—

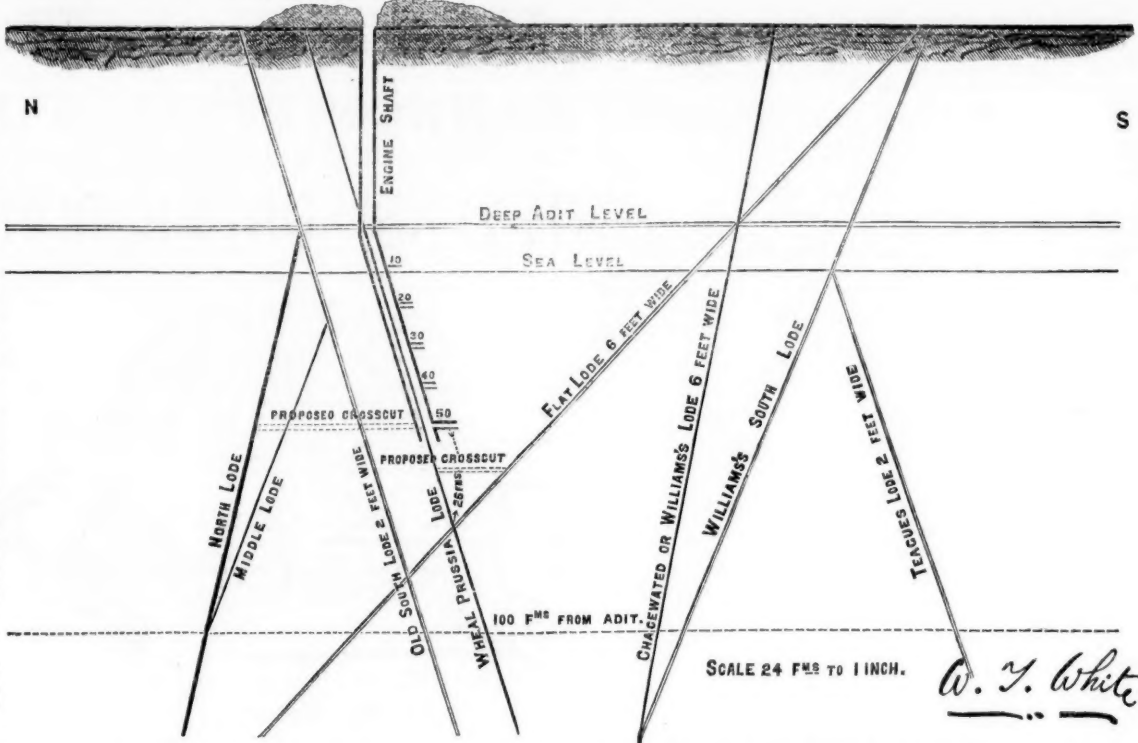
Mr WILLIAM H. BUMPUS,

STOCK BROKER AND MINING SHARE DEALER,

44, THREADNEEDLE STREET, LONDON, E.C.

WHEAL BOYS

Wheal Peavor, Redruth, Dec. 15, 1880.—It is with great pleasure I beg to hand you the following report:—The mine is situated in the midst of a group of mines well known for their richness, and the chief portion of the lodes of which are running through the sett. In the first place there are Wheal Prussia and West Peavor, immediately adjoining on the west, which are now being vigorously worked. The lode on which operations are now being carried on in Wheal Prussia, and which has proved so productive up to the present, is the Wheal Boys great tin lode running through the centre of both mines. A pair of men have been engaged above the adit level in Wheal Boys for some time on this lode, and between 100 and 200



tons of good quality tin stuff has been broken from the lode, which is very large and of a most congenial nature. This stuff is now underground ready to be drawn to surface. The very large workings that have been made formerly in various places on the lode above the adit level afford evident proof of its productiveness, as the stuff broken therefrom in the previous working has been drawn to surface, dressed, and sold. The mine has been thoroughly dialed to the adit level, and there are eight well-defined lodes discovered, as shown in the accompanying plan, varying in size from 2 ft. to 6 ft. in width. The whole of these lodes can be easily proved by cross-cutting from the engine-shaft, which is sunk to about the 50 fms. level, and I find, from the underlie of Wheal Prussia lode, that in about 26 fms. deeper sinking an important junction with this and the flat lode takes place, and I have no doubt but that large quantities of tin will be found at this point. As I before mentioned, by driving short cross-cuts from the engine-shaft, even at the present depth of the mine, several lodes can be intersected, and from the knowledge I have of the district, and the nature of the lodes therein, I have not the slightest doubt about their productiveness. At Wheal Peavor our best deposits of tin are found on similar junctions, and knowing the character of the

ground to be the same equally good results may be expected from Wheal Boys. Old Treskerby Mine is situated to the east, and immediately adjoining whose lodes are the Wheal Boys lodes. I understand Treskerby alone made returns of about £600,000, and being the same lodes I can see no reason why they should not be of equal productiveness in this mine.

Wheal Peavor is immediately adjoining to the north, and the old Cardew Mine to the south. The main lode of the latter being a parallel lode with the Wheal Boys lode, and underlying towards each other, a most important junction must necessarily take place at a comparatively shallow depth. The water charges here must of necessity be very light, but in order to meet all emergencies the foundation for an engine-house is being taken out and the building of same will be carried on with all speed.

The mine can be worked very cheaply and developed for little cost, the ground generally throughout the district being of a soft nature for cross-cutting, &c., and considering the whole of the advantages in connection therewith, both at surface and underground, I can with the greatest confidence recommend this mine as one that will, in my opinion, be found largely productive. W. T. WHITE

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Messrs. ABBOTT and WICKETT, stock and share brokers, Redruth (Dec. 22), write:—There has been but little alteration in the market during the past week, and to-day there is not much inclination to sell at current rates. West Peavor, Pedn-an-drea, and South Frances shares readily find buyers. Closing prices annexed:—Blue Hills, 3½ to 4; Carn Brea, 98 to 100; Cook's Kitchen, 10½ to 11; Dolcoath, 56 to 58½; East Pool, 35½ to 36½; Mellanear, 4½ to 5; New Cook's Kitchen, 6½ to 7; North Bury, 2½ to 2½; Pedn-an-drea, 1½ to 1½; Pen-darves United, 9½ to 10; Santa Gertrude, 175 to 180; South Condurrow, 10½ to 11; South Crofty, 10 to 11; South Frances, 11 to 11½; Tincroft, 20 to 20½; West Basset, 14½ to 15; West Pollice, 3½ to 4; West Peavor, 16½ to 17; West Frances, 11 to 11½; West Tolgus, 47 to 50; West Seton, 17 to 18; Wheal Agar, 6 to 6½; Wheal Basset, 5½ to 5½; Wheal Grenville, 10½ to 11; Wheal Kitty, 4 to 4½; Wheal Peavor, 27½ to 28½; Wheal Prussia, 1½ to 2; Wheal Uny, 4½ to 4½. Tin, 90½. Steady market.

—Mr. S. J. DAVEY, mine sharedealer, Redruth (Dec. 22), writes:—Very little change has occurred in our market since last week, and there has not been much business done. At Wheal Peavor meeting, on Tuesday, a dividend of 20s. per share was declared. Market to-day closes firm. The following are to-day's prices:—Blue Hills, 3½ to 4; Carn Brea, 98 to 100; Cook's Kitchen, 10½ to 11; Dolcoath, 56 to 58½; East Pool, 35½ to 36½; Mellanear, 4½ to 5; New Cook's Kitchen, 6½ to 7; North Bury, 2½ to 2½; Pedn-an-drea, 1½ to 1½; Pen-darves United, 9½ to 10; Santa Gertrude, 175 to 180; South Condurrow, 10½ to 11; South Crofty, 10 to 11; South Frances, 11 to 11½; Tincroft, 20 to 20½; West Basset, 14½ to 15; West Pollice, 3½ to 4; West Peavor, 16½ to 17; West Frances, 11 to 11½; West Tolgus, 47 to 50; West Seton, 17 to 18; Wheal Agar, 6 to 6½; Wheal Basset, 5½ to 5½; Wheal Grenville, 10½ to 11; Wheal Kitty, 4 to 4½; Wheal Peavor, 27½ to 28½; Wheal Prussia, 1½ to 2; Wheal Uny, 4½ to 4½. Cornish Bank, 20.

—Mr. J. H. REYNOLDS, stock and share broker, Redruth (Dec. 22), writes:—During the week transactions have been limited, pending the holidays. At Wheal Peavor meeting, yesterday, a dividend of 11s. per share was declared, and a good report presented to the shareholders. Subjoined are the closing quotations:—Blue Hills, 3½ to 4; Carn Brea, 98 to 100; Cook's Kitchen, 10½ to 11; Dolcoath, 56 to 58½; East Pool, 35½ to 36½; Mellanear, 4½ to 5; New Cook's Kitchen, 6½ to 7; North Bury, 2½ to 2½; Pedn-an-drea, 1½ to 1½; Pen-darves United, 9½ to 10; Santa Gertrude, 175 to 180; South Condurrow, 10½ to 11; South Crofty, 10 to 11; South Frances, 11 to 11½; Tincroft, 20 to 20½; West Basset, 14½ to 15; West Pollice, 3½ to 4; West Peavor, 16½ to 17; West Frances, 11 to 11½; West Tolgus, 47 to 50; West Seton, 17 to 18; Wheal Agar, 6 to 6½; Wheal Basset, 5½ to 5½; Wheal Grenville, 10½ to 11; Wheal Kitty, 4 to 4½; Wheal Peavor, 27½ to 28½; Wheal Prussia, 1½ to 2; Wheal Uny, 4½ to 4½; Cornish Bank, 20.

—Mr. JOHN CARTER, mine sharedealer, Camborne (Dec. 22), writes:—Little change to notice has taken place in the share market this week. Prices have been firmly maintained, and, contrary to expectation, there has been no pressure to sell to close speculative accounts in our leading mines, and which is frequently the case at this season of the year. This augurs well for the course of prices in the new year. The tin market has a healthy appearance, and prices of both foreign and English keep firm. During the week fluctuations have taken place in South Frances, which at one time reached 11½, buyers, but close to-day at 11. Dolcoath shares declined to 55½, but close firm at 56½. A large profit is expected to be shown at Carn Brea meeting on Thursday; these shares are firm at 98 to 100. Subjoined are the closing prices:—Blue Hills, 3½ to 4; Carn Brea, 98 to 100; Cook's Kitchen, 10½ to 11; Dolcoath, 56 to 58½; East Pool, 35½ to 36½; Mellanear, 4½ to 5; New Cook's Kitchen, 6½ to 7; North Bury, 2½ to 2½; Pedn-an-drea, 1½ to 1½; Pen-darves United, 9½ to 10; Santa Gertrude, 175 to 180; South Condurrow, 10½ to 11; South Crofty, 10 to 11; South Frances, 11 to 11½; Tincroft, 20 to 20½; West Basset, 14½ to 15; West Pollice, 3½ to 4; West Peavor, 16½ to 17; West Frances, 11 to 11½; West Tolgus, 47 to 50; West Seton, 17 to 18; Wheal Agar, 6 to 6½; Wheal Basset, 5½ to 5½; Wheal Grenville, 10½ to 11; Wheal Kitty, 4 to 4½; Wheal Peavor, 27½ to 28½; Wheal Prussia, 1½ to 2; Wheal Uny, 4½ to 4½; Cornish Bank, 20.

—Mr. M. W. BAWDEN, Liskeard (Dec. 22), writes:—The mining market assumes its usual quietude at this close of the year, and will probably remain so until

after the Christmas recess. At South Caradon Mine meeting, held yesterday, the accounts showed a balance of 82. 13s. 9d. profit on the three months' working. Subjoined are the closing prices:—Bedford United, ¾ to ¾; Carn Brea, 97 to 98; Gunislake (Olliters), 3½ to 3½; Cook's Kitchen, 10½ to 11; Dolcoath, 56 to 57; Drake Walls, 1½ to 2; Devon Consols, 15½ to 16; Devon United, 1½ to 2; East Caradon, 1½ to 2; East Crebor, ¾ to ¾; East Herodsfoot, ¾ to ¾; East Pool, 35 to 36; Gawton United, 1 to 1½; Glasgow Caradon, 1½ to 1½; Herodsfoot, ¾ to ¾; Hington Down, 1½ to 1½; Marke Valley, 1½ to 2; Mount Carbis, 2 to 2½; New West Caradon, ¾ to ¾; North Herodsfoot, ¾ to ¾; Old Gunislake, ¾ to ¾; Phoenix United, 2½ to 2½; Prince of Wales, ¾ to ¾; South Caradon, 55 to 57½; South Condurrow, 11 to 11½; South Crebor, 1½ to 1½; South Crofty, 10 to 10½; South Devon United, 1½ to 1½; South Frances, 10½ to 11; Tamar Silver-Lead, 1½ to 1½; Tincroft, 19½ to 20; West Basset, 14 to 14½; West Caradon, 1½ to 1½; West Frances, 11 to 11½; West Crebor, ¾ to ¾; West Phoenix, 1½ to 1½; West Tolgus, 17½ to 18; West Mary Ann, 1 to 1½; West Chiverton, 1 to 1½; Wheal Agar, 6½ to 6½; Wheal Basset, 5 to 5½; Wheal Crebor, 4½ to 4½; Wheal Fortesque, 1½ to 1½; Wheal Grenville, 10 to 10½; Wheal Hony and Trellawny, 2½ to 2½; Wheal Kitty, 4 to 4½; Wheal Peavor, 27 to 27½, x.d.; Wheal Uny, 4½ to 4½.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, sharebrokers, Queen's Chambers, Market-street (Dec. 22), write:—The approach of the holidays curtails business in no small degree, and although very little inclination is apparent to enter to any extent on new operations till the turn of the year, prices continue to rule generally very firm, and in many instances better figures are obtainable. The chief feature of the market is dullness, from the reason stated above, otherwise the tone is very steady.

BANKS have produced very little business compared with the number of transactions we have had to record for some weeks past, but here also all the changes are for the better, with one exception—that of Oldham Joint Stock, which have risen uninterruptedly for some time, but with a cessation of the demand have declined ½ from their best. Manchester and County have been a trifle higher during the week, but to-day's figures are substantially the same as those ruling at our last writing.

INSURANCE.—Until to-day the only movements were in Manchester Fire, at steady rates; to-day, however, some few others have changed hands, but there is nothing calling for special remark, except, perhaps, the fact that Thames and Mersey Marine have passed at 12 (2d. paid). The alterations are rather irregular, but in no cases are there any severe changes. Higher—Manchester Fire, ½; Liverpool and London and Globe, ¾; Lancashire Insurance, ½; and Thames and Mersey Marine, ½. Lower—Imperial Marine, ¾; Queen, ¾; and Positive, 6d.

COAL, IRON, &c., AND MINING.—A very small amount of business has been transacted, but prices are fairly maintained on dealings. In Canadian Copper several transactions are marked at advancing figures, prices after close this evening showing fresh sharp advance. The changes of quotations do not show any great movement in either direction; they are as follow:—Higher—Canadian Copper, &c., 3s. 6d.; Darlington Iron, ¾; Lynvi and Tondou, ¾; Palmer's Shipbuilding, ¾; Telegraph Construction and Maintenance, ¾; Bolckow (fully paid), ¾; and Thariss Sulphur, &c., ¾. Lower—Staveley Coal, &c., A, ½; John Brown, ¾; Great Laxey Lead Mine, ¾; Cannell, ¾; Earle's Shipbuilding, ¾; and Chillington Iron, ¾.

COTTON SPINNING AND MANUFACTURING keep steady, and in many cases advanced figures are not only asked but obtained. A large number of these concerns take stock at the end of this week, and the results are expected to show some very good profits, in which case a further strengthening of the market may be looked for, the only apparent bar to higher prices being now more fully established, lying in the fact that in this market also operators seem disinclined to move much pending the holidays and the balance-sheets shortly to come out.

TELEGRAPHS have been neglected during the week, and prices have receded almost all round. Some few dealings have been marked, however, and prices realised are not much below those lately ruling. Quotations are all for the worse where changed. They are Anglo, ordinary, ¾; ditto, deferred, ¾; ditto, pref., ¾; Direct United States Cable, ¾; Globe, ¾; West India and Panama, ¾; and Western and Brazilian, ½ all lower. CANALS, unmoved, with the exception of one transaction in Rochdale, figures remaining unchanged.—CORPORATION STOCK AND ANNUITIES continue to command full rates. An odd lot of Manchester Corporation Stock has changed hands at 108, which price, considering that they were only lately marked ex div., means nearly 110 for a 4 per cent. stock, showing that a large amount of money is in the market and little disposition to embark it in commercial undertakings. MISCELLANEOUS show mostly better where changed, but excepting a rise of 3 in West India and Pacific Steam no alteration of importance is to be noted.

RAILWAYS.—Taking a balance of this week's alterations, there is a decided preponderance of advances. The goods lines are again higher, being influenced by their favourable traffics, Lancashire and Yorkshire coming to the front after

being neglected for some time past, as also Londons, Midlands, and North Easterns. There has been a recovery in Chathams and their preference, the latter looking cheap as an investment, full dividend being expected this half. North British and Great Westerns are the only exceptions to the general rise, their quotations about 1 per cent. and ½ per cent. easier respectively, the traffic not being satisfactory. Canadians have gone dull, with the small amount of business in progress, although prices are firmer all round. The American market has been excited, and all descriptions exhibit an improvement. Atlantic and Great Western Mortgages decidedly stronger, and Oregon and California Frankfort Certificates has shown some animation, quoting 1 higher.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (Dec. 22), writes:—Since last report business has been interrupted by the severe weather, rendering telegraphic communication ineffectual; but although transactions have been limited, prices are firm, owing to the very satisfactory prospects of trade in the coming year.

In shares of coal, iron, and steel companies Clyde Coal shares have advanced 3s. 9d. per share, Monkland (pref.) and Steel Company of Scotland each 2s. 6d.; on the other hand, Benhar Coal have declined 4s. 6d. per share, Monkland 2s., Chillington Iron 1s. 3d., and Marbella, 1s. In the Scotch pig-iron warrant market warrants have been sold from 52s. to 50s. 10d. The market is quiet, as usual at this time, but prices do not give way much, owing to the "bear" account and good prospects for next year. The Clyde shipbuilding trade and other departments of the manufactured trade all agree in reporting more work doing, so that with trade in such a healthy state there is every reason to expect extended trade and increased profits in the new year. The rise in Clyde Coal shares is owing to the announcement that two more directors have been added to the board, one of whom is the late general manager of Merry and Cunningham; these and other important changes are in progress to give additional stability to the company and confidence to the shareholders. Benhar Coal shares, after improving to 14s., have given way to 8s. 6d.; Antrim Ore, A, are at 46s.; Andrew Knowles and Sons, 13 dis.; Bilson and Crump Meadow, 60s.; Bolckow, Vaughan, A, 28½; Cardiff and Swans, 35s.; Charles Cammell and Company, 8½ dis.; Chillington Iron, 77s. 6d. to 80s.; Clyde Coal, 87s. to 89s.; Darlington Iron, 14 dis.; Elbow Vale, 10½ to 10½; Great Western Colliery, 60s.; Henry Briggs, A, 10 to 12; John Bagnall and Sons, A, 27s. 6d.; John Brown and Co., 11½ dis.; Lynvi and Tondou, 8½ to 8½; Lofthouse Colliery, 78s.; Marbella, 75s. to 77s.; Monkland Iron and Coal, 52s.; ditto (pref.), 5½ to 5½; Mersey Steel, 58s. dis.; Muntz's Metal, 13½; Mwyndy Iron, 45s.; Newport Abercromby Coal, 7; Oakham Colliery (pref.), 5s.; Orma and Cleland, 34s. to 36s.; Pelsall Coal and Iron, 5 dis.; Rhymney Iron, 29; Sandwell Park Colliery, 17; South Wales Colliery, 40s.; Staveley, A, 18½; ditto, C, 7; Steel Company of Scotland, 10½ to 11; Teeside (pref.), 7s. 6d. prem.; Thorp's Gawber Hall, 20s.; Tredegar, B, 23; and West Cumberland, 10 dis.

In shares of foreign copper companies Rio Tinto have advanced 10s. per share, and Canadian 2s. 6d., but Cape are easier. Tharsis have been firm at 33½. 15s. to 33½. 15s. 3d. Alamillos are at 55s.; Canadian, 35s. to 37s. 6d.; Copiapo, 11½; English and Australian, 27s. 6d. to 32s. 6d.; Linars, 6½; New Quebrada, 5½; Panulillo, 6; Pierrefitte (pref.), 22s. 6d.; Rio Tinto 5 per cent., 100½; Virneberg, 30s. to 40s.; Yorke Peninsula (pref.), 17s. 6d. to 20s. In shares of home mines business continues quiet, owing to the dull state of the metal markets. Glasgow Caradons have been down a fraction lower, at 24s. Aberllyn are at 12s. 6d.; Blaen Caelen, 25s.; Bedford United, 20s.; Bwch United, 40s.; Cwm Pryf, 11s. 3d.; Cook's Kitchen, 10½; Carn Camborne, 57s.; Devon Consols, 16; Devon United, 47s. 6d. to 50s.; East Caradon, 30s. to 40s.; East Herodsfoot, 7s. 6d.; East Wheal Lovell, 85s. to 95s.; East Long Rake, 20s.; East Devon Consols, 62s. 6d.; Grogwinlon, 55s. to 60s.; Great Laxey, 19; Indian Queen Consols, 30s. to 40s.; Killfrith, 5s.; Lady Bertha, 17s. 6d.; Mid-Devon, 5s.; Mount Carbis, 38s. 9d.; Marke Valley, 42s.; North Bury, 52s. 6d.; New West Caradon, 15s.; North D'Eresby, 25s.; North Molton, 8s. 9d.; Pant-y-Mwyn, 20s. to 30s.; Prince of Wales, 18s. to 20s.; South Condurrow, 11; South Crebor, 27s. 6d. to 32s. 6d.; South Caradon, 64; South Frances, 10½; South D'Eresby, 15s.; Tamar, 22s. 6d.; Tin Hill, 25s.; Van, 16; West Pollice, 80s.; West Caradon, 30s. to 40s.; West Seton, 17 to 19; West Chiverton, 20s. to 30s.; West Phoenix, 40s.; Wheal Jane, 13s. to 15s.; Wheal Jewell, 10s. to 15s.; Wheal Kitty, 80s. to 90s.; Wheal Hony, 42s. 6d.; and Ystwith, 16s. to 15s.

In shares of gold and silver mines Richmonds are firmer at 15½ to 16½ ex div.; this week's run is 855,000. St. John del Rey are firmer, as the erection of the machinery will soon be completed, which will enable quarrying operations to be resumed on a large scale. The Silver Peak Company has been successfully floated. Flaxilla unaltered. Almadra are at 8s. to 10s.; Cillao Bis, 20s.; Cedar Creek

4s. to 8s.; Colorado, 47s. 6d.; Devala Provident, 1s. to 2s.; Devala-Moyar, 48s. 9d.; Don Pedro, 14s.; English-Australian, 17s. 6d. to 20s.; Exchequer, 10s.; Eberhardt, 43s. 9d.; Emma, 66s. 3d.; Frontino, 54s.; Flagstaff, 30s.; Glenroche, 50s.; Indian Phoenix, 3s. 5d.; La Plata, 41s. 3d.; New Gold Run, 5s. 6d.; Nava de Jadrac, 20s.; Potomac, 12s. 6d.; Port Phillip, 11s.; Rio Grande, 45s.; Rossa Grande, 3s. to 5s.; Rhodes Reef, 2s. 6d. prem.; Ruby, 61s.; San Pedro, 12s. 6d. to 17s. 6d.; South-East Wynaad, 55s.; Tecoma, 5s. to 10s.; and Victoria (London), 8s. to 12s.

In shares of oil companies, Broxburn have advanced 7s. 6d. per share, and Young's Paraffin are also 2s. 6d. higher; the latter have been done at 13½ to 13½.

In shares of miscellaneous companies, business is quiet. Neuchatel Asphalt (pref.) shares are in favour on prospects of a dividend. Droitwich Salt, 17s. 6d. to 22s. 6d.; Earle's Shipbuilding, 12½ ds.; Milner's Safe, 10; Zedoncos, 30s.

Prices of wagon companies shares are—Bristol and South Wales, 6½; Birmingham, 12½; Gloucester, 85 to 87; Metropolitan, 60s. prem.; Midland, 9½; Railway Carriage, 85s.; Railway Rolling Stock, 8; Swansea, 50s.; United States Rolling Stock, 13½ to 19.

Prices of chemical companies are—Langdales, 57s. 6d. to 60s.; Lawe's, 5½ to 5½; Newcastle, 55s. to 60s.

LANGRES COPPER MINE.—The ore from this mine is of such a high quality that it will require very little dressing, and should the ore cut well at the 40 the estimated return of 100 tons per month will be far below actual results. The mine now, to a practical miner, is as good as if the metal was actually in view; but, of course, the general public go by actual results only, which accounts for the shares still being obtainable at par. It should be explained that the estimated value of the lode at the 16–302, per fathom—is, for safety, hardly one-third of what it appears likely to turn out. It is a mere question of driving north at the 40 to catch the ore ground, to establish beyond doubt the value of this grand property.

BENHAR COAL COMPANY (Limited).—A meeting of the committee representing the creditors and shareholders of this company and several of the directors was held on Thursday last. Nothing definite was arrived at, but the resolutions under consideration included (1) the appointment of provisional liquidators, but no date fixed for so doing; (2) that if there appeared any risk of any creditor obtaining a preference application should at once be made to the Court for the appointment of these liquidators; and (3) that there be a committee of advice consisting of three Glasgow and three Edinburgh shareholders, and three creditors to assist the liquidators. The general meeting of shareholders to consider these proposals is to be held on Dec. 30.

EDINBURGH.—Messrs. THOMAS MILLER and SONS, stock and share-brokers, Princes-street (Dec. 22) write:—The demand for high-class preference and for guaranteed and debenture stocks continues. In railway ordinary stocks no very strong movement has been observable, although there have been the usual fluctuations. Insurance shares have maintained their prices. In banks, the only changes have been a rise of 5 in Clydesdales to 215, a rise of 5 in Commercial to 255, and a rise of 1 in National to 273. In mining shares, Benhar have been incessantly changing price; since Friday last there is a fall from 10s. 6d. to 8s. 6d. Canadian Copper were in some demand to-day, and rose from 34s. to 37s. A good deal has been done lately in Clye Coal shares. A strong demand carried the price to 91s. 6d. on Saturday, but it has since gone back to 89s. 6d.

Meetings of Public Companies.

NEW QUEBRADA MINING COMPANY.

An ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Thursday.

The Hon. T. C. BRUCE, M.P. (the Chairman), presiding.

Mr. N. G. BURCH (the secretary) read the notice calling the meeting, and the report and accounts were taken as read.

The CHAIRMAN said: Gentlemen, I have only to offer you a few remarks before moving the adoption of the report. The report itself, as is usually our practice, is pretty full, and I think gives a very complete statement of the position and progress of the company's works, and it does not leave very much for me to add, so I will not detain you long, but I will add one or two things which have occurred to me, which you would like to know, beyond what is printed in the report itself. In the first place you will observe that we have issued the report in a form different from what we formerly did; we have not appended any accounts to it, and the reason for that is stated in the report. It is briefly this, owing to the arrangement under which we work with the Bolivar Company (with which you are acquainted), and the arrangement under which we shall work after this year, a set of accounts coming to the end of the year would present an unfavourable and untrue report of the position of the company. Up to a certain minimum the proceeds go to the Bolivar Company, after the deduction of a sum agreed upon for working expenses, and interest, upon debentures, so that during a considerable portion of the year the accounts, certainly up to the half-year, and sometime afterwards, would show a deficit, which, to persons who were not wholly aware of the circumstances, would present the affairs of the company in an untrue and unfavourable light. The actual minimum which we have to pay to the Bolivar Company will be reached this year about the end of September, which is some time before last year; but if we had published accounts to the end of June they would have shown a deficit which would not only be misleading to the public, but would be unfair to the shareholders, as it would induce the public to consider the affairs as different to what they are. (Hear, hear.) Under these circumstances, and considering the arrangement which will come into force next year contains the same principle, we have thought it desirable and necessary not to insert any accounts in this report, but in the next, when we shall meet you in June next, when we shall be able to present you with a full account for the year, with a balance-sheet and a full statement; and we shall then also take occasion to present for your consideration and acceptance some alterations in the Articles of Association to enable us to carry out the system which we think is proper for the management of the company in Bolivar. With respect to the position of the mine, I have not much to add to what is mentioned in the report. What we call our ordinary working—that is, the working of that portion of the mine which is open—is proceeding in a regular and satisfactory manner, and there is nothing new about it. The works are proceeding on the old lines, and with similar results. There are only two features which have come to light during this half-year of any particular bearing upon the prospects of the company—one is that two levels and been driven above what is called the Santa Barbara level, where we are working on a large quantity of very good ore; indeed, a large portion of our output is derived from that portion. One level is driven 120 ft. above the Santa Barbara, which is in good ore, and it indicates that the ore is 120 ft. above the level we are working now, and there is no reason to suppose it may not come considerably better. It indicates a considerable mass of ore. At that spot there are some old workings at the upper portion, where the new levels penetrated, and a mass of the ore is indicated at that part, and promises a large productive claim for some time, in fact, in the deep level running to the north we have progressed steadily since we last had the pleasure of meeting you. Later we have been obliged to stop it from a deficiency in the air, but that is being remedied by the cross-cut, which will give us air to that part of the working. We have driven a cross-cut eastward from where the deep level at present stands up to the eastern wall at that point. As I stated at the last meeting, the lode had been somewhat narrow where we passed through it. The place where the cross-cut has met it is further north. We have reached the eastern wall at a breadth, I think, of 100 ft. approximately, and there it is in very good ore, and the appearance of the lode indicates that it is wider out at that spot, so that instead of coming to the end of it we are coming to a place where the ore will be wider, and there will be more ore to be drawn from it than where we are working at the present time. (Cheers.) These are the only features in what I would call the ordinary working during the past half-year, which I think are of interest, as showing the development of the property, and the increasing prospect, or rather certainty, of having an increased amount of ore to come to. (Hear, hear.) We are sometimes troubled with the difficulty of getting labour, which can generally be got over, but that prevents from mining as much as we can wish; but I may mention that the gross output for the mine during the past three years exhibit a pretty steady progress. During the year 1878 the gross output—that is the amount of ore taken out of the mine, not the amount sent down—was 10,021 tons; in the year 1879 it was 15,250 tons, and for the first ten months of the present year it amounted to 17,708 tons, and we can estimate pretty fairly that the total amount before the end of the year will be about 22,000 tons, which shows how well Mr. Holman, our mining superintendent, and the staff generally, have performed their duties; and I may repeat what I said on a former occasion—that we have every reason to be satisfied with them, and they deserve the best thanks of the shareholders as well as ourselves. (Hear, hear.) We have continued satisfactorily working out and developing the resources of the mine in the great point of getting out mineral; but there is a subject which has been mentioned once or twice, and which we are now proceeding to take in hand practically; that is the application of machinery in the way of drilling apparatus for working this mine. The application of machinery is known to everybody who is at all familiar with mining, and it has been frequently recommended to us by Mr. Darlington, a gentleman whom we have considered. The only reason why we have not adopted it to any extent so far is that we wanted to ascertain if we had a large mass of ore to deal with, which would justify the operation; and in the second place, we were somewhat hampered by the financial position of the company. We had a large floating debt; that floating debt was not consolidated, and under certain circumstances might have been troublesome, so that we were unwilling to engage in any large expenditure under these circumstances. Now our workings have shown, as certain as anything can be in mining, that we can command a very large quantity of ore. Owing to the arrangements which have taken place since the last meeting our financial position has much improved, and we have no liability of this kind. We think, therefore, that it will be a proper time to take in hand the question of machinery, by which we believe we shall be able to carry on the works much more rapidly, and put out a greater quantity of ore for shipment, and carry on with great economy over the simple method of hand labour. (Hear, hear.) We are giving attention to that, and we hope shortly to send out machinery to begin operations in that way. (Hear, hear.) There is another subject which is mentioned in the report, which is of very great interest, but it is pretty fully stated in the report, and I do not know that I have very much to add. It is the discovery which was made some time ago in the ground intervening between the Aroa ground, which we are now working, and the Titima Mine, to the north, which we have opened, but not worked upon extensively. About 500 yards to the north of our present workings there is a cleft in the mountain (the mountain is very irregular), and in this has been discovered the outcrop of another lode, which we have penetrated to a distance of about 100 ft., and, which, so far as we have gone, is in good ore, and has every appear-

ance of being a solid and real lode. (Hear, hear.) We have directed a second level to be driven in the same spot a little below the first one, so as to test the ore in depth, and we have directed cross-cuts to be made to determine the width and direction of the lode. These are not completed, and we cannot speak positively till we have the report; but the thing which is most interesting is that the Aroa lode, speaking generally, runs south and north of Titima lode, and is about one mile off, and it runs in the same direction to the north. Well, this new lode, which is about 500 yards from the present workings, and more than double the distance from Titima, is partly in the line of the other two lodes, so that leads us to believe and to the strong impression that the lode which we are now working will prove to be continuous, and that in reality it is part of the same lode which exists in the Titima Mine, as the new lode is in a direct line between the two. If it turns out as we hope it will be a new source for the extraction of ore, which will enable us to increase our output considerably, and which will indicate that our property contains not only two detached lodes, but also a more or less continuous lode between the two points. (Hear, hear.) This, if true, would be of great importance, as it would raise the value of the property to a great extent. I have told you exactly how it stands—namely, the continuation of the lode throughout all the distance, but this new discovery tends to give it a strong appearance of probability. We have found that where there are a very large mass of ore, and if we find in this new place another very large mass it will give us ore to work for a great number of years—to work economically and successfully for the shareholders. (Cheers.) I do not wish to say more about it. It is a thing which will, no doubt, inspire people who are in the habit of taking sanguine views with hope. I have a hope, and I believe this hope will be realised. In the meantime we have not proved it, but every indication we have tend to the conclusion. There is another question, which is that of the smelting works. I mentioned at the last meeting that we were preparing and making arrangements for smelting the lower class of the ores there, and that we had sent out machinery for that purpose. That machinery has been placed in position, and it has worked very well. We had to work it by water-power, and we have made a better main for the purpose of working the machinery. It has been entirely successful, and is giving us every satisfaction. There are difficulties connected with the smelting in chemicals, and difficulties of that kind, as the new ore requires some little experience to deal with it, but the results which we have obtained, although not complete yet, still gives the impression, the certainty I may say, that such difficulties will be overcome, and shall be able to account the smelting of a very material part of our operations. (Hear, hear.) There is still a difficulty connected with the smelting, and we might have proceeded more rapidly had that difficulty not existed. There are certain questions of royalties. Well, these questions have not yet been definitely settled. We have reason to hope and believe that they will be so, but as we have to deal with two or three parties having separate interests it is difficult to get an arrangement, and sometimes we have a Court of Chancery case in the middle of it. But we have reason to hope that we shall soon get a reasonable and a fair arrangement of the matter, which will enable us to carry on the smelting and other works as rapidly as we intend to do. (Hear, hear.) There is another point. At the last meeting we were authorised to issue debentures, and consolidate the floating debt of the company. The details of the proposals were submitted to the meeting, and fully explained at the time, but I may add that the issue of debentures was entirely successful, and the whole amount was taken up. I believe they are now reckoned a very good security, and readily obtain in the market a better price than they were issued at. But I may add that the amount of work done has been fairly done, and the credit of Mr. Burch and the staff that the issue was made at an expense to that company which was quite illusory—it need scarcely be mentioned; so for the sum of debentures issued the company may be said to have received in money the full amount issued. (Cheers.) Although the accounts are not before us, it will be more easy and better to speak of them when we have the full year's accounts before us, but so far as they go it seems that the price of labour in that district has remained pretty stationary, and as the output is rather large the price of production per ton is slightly lower than it was. The freight is about the same, the price of the ore has realised as far as about the average of the prices last year. We have renewed our contract with the Bolivar Company, as was mentioned to you at last meeting. There is also a subsidiary contract for the conveyance of the ore from the mine to the smelting works, and we have renewed that for a year upon what are considered to be fair and liberal terms. There is one other matter which I wish to bring to your notice, which is not in the report, and that is with regard to an arrangement which has been only made subsequently to the time that it was issued. It came to our knowledge that Mr. Ormiston, the Chairman of the Bolivar Company, a man of great engineering knowledge and ability was going to Venezuela, and we thought it very desirable that he should report for us as well as for his own company. We accordingly elected him a director in the place of Mr. Hemming, whose loss we very much regret; and Mr. Ormiston has gone out with a commission to examine thoroughly all the operations there, and give the benefit of his advice to the acting manager, and also give us his opinion upon what he found in the country. (Hear, hear.) I have nothing more to add, except to say that, on the whole, the progress of our works and operations during the last six months has been entirely satisfactory. The amount of work done has been fairly done, and I think we shall increase it when we have machinery to aid our present staff. Our manager, Mr. Holman, as I have said, continues to give us great satisfaction, and throws the greatest zeal into the service of the company. I have further to say that the prospects which are opening to us of additional value to the mine, as far as we have at present tried them, seem very encouraging, and I hope and trust, before long, will place the affairs of the company even in a more favourable light than they are now. (Cheers.) I move that the report be received and adopted.

Mr. T. W. MEADE (deputy Chairman) seconded the resolution.

A SHAREHOLDER asked for what period the debentures were issued?—The CHAIRMAN said they would be paid off, by yearly payments, in 20 years.

A SHAREHOLDER said that at the July meeting mention was made of some rich ore in the San Antonio Mine; he asked whether there was any further information upon that point?—The CHAIRMAN said that nothing more had been done there. The directors were rather pressing on the new discovery; one thing must be taken at a time, but the San Antonio would be pushed on afterwards.

Accounts and no dividend. There any dividend this time?—The CHAIRMAN: No accounts and no dividend.

A SHAREHOLDER asked the Chairman whether he could give any idea as to what would be over towards a dividend?—The CHAIRMAN: I can only say that the produce is rather larger than last year, but we cannot exactly tell how it will turn out in the accounts. It depends entirely upon the next three months' sales, but there is no reason to suppose that we shall be in any worse position, and we hope to be in a better. (Hear, hear.)

The CHAIRMAN, in reply to Mr. WARD, said the board had commenced paying off the debentures.

The resolution for the adoption of the report was then put and carried.

The CHAIRMAN moved that the election of Mr. Ormiston to a seat at the board be confirmed.

Mr. JAMES THOMPSON seconded the resolution. He said that Mr. Ormiston was an able man, and a very just and fair man, and the board were very fortunate in being able to avail themselves of his visit to ask him to examine the property.—The resolution was put and carried.

The motion of Mr. LEADLEY, seconded by Mr. WILLIAMS, the retiring director, Mr. N. LEADLEY and Mr. James Anderson were re-elected.

On the motion of Mr. RITCHIE, seconded by Mr. PEMBERTON, the auditor, Mr. H. J. Whalley, was re-elected.

On the motion of a SHAREHOLDER a cordial vote of thanks was passed to the Chairman and directors.

The CHAIRMAN acknowledged the compliment, and added—I have great pleasure in meeting you under these favourable circumstances, and I hope we shall have many happy meetings at which we can declare dividends. (Cheers.)

The motion of Mr. LEADLEY, seconded by Mr. N. LEADLEY, a vote of thanks was passed to Mr. Holman and the staff, and the meeting broke up.

CANADIAN COPPER AND SULPHUR COMPANY

The ordinary annual general meeting of shareholders was held at the Cannon-street Hotel, on Thursday, Mr. J. W. MACLURE in the chair.

Mr. W. G. WILLIAMS (the secretary) read the notice convening the meeting, and the directors' report and statement of accounts were submitted.

The directors point out that in the profit and loss account amongst the items charged is 13484. 14s. 10d. for explorations at the mines, of the advantage of which, when completed, they are most sanguine, and 5077. 0s. 3d., the damages and costs in the action which was brought against the company by a workman named Hall for an accident, and referred to in last year's report. Immediately after the extraordinary general meeting held last April, when a resolution was passed sanctioning the issue of debentures to the extent of 15,000l., the directors were able at once to place the whole amount amongst the shareholders in the company. Up to Sept. 30, 7840l. was received on these debentures, the directors having arranged not to call up the full amount in some cases, so as to prevent an unnecessary charge for interest thereon until the whole of the money could be safely and profitably employed.

As soon as the necessary capital was provided instructions were sent to Capt. Bennetts to commence a vigorous exploration and working of some of the company's mines which had been favourably reported on. Weekly reports have been published in the Mining Journal for the information of the shareholders. As there would have been considerable difficulty in obtaining the necessary supplies of cord-wood to carry on smelting at the Capetown works during this winter, the directors accepted an offer from the Orford Nickel and Copper Company for the use of those works for a limited period, that company undertaking to smelt ore for the Canadian Copper and Sulphur Company at a fixed rate per ton. The contract commenced on Sept. 1, and the first result under it has been about 56 tons of copper regular, which was forwarded to Liverpool on Nov. 20.

The directors have also arranged with the Orford Nickel and Copper Company, who have a mine adjoining the Hartford Mine, for a lease of the No. 5 shaft at the latter place, on terms which will bring revenue to this company, proper provision having been made that it shall not interfere with this company's works. The judicious and economical manner in which Capt. Bennetts has conducted the operations of the company during the past twelve months has given great satisfaction to the directors, and they feel confident that his expectations of the future successful results of the working of the company will be realised.

As the books will now be kept in London, the board would suggest the propriety of the shareholders appointing a London auditor. Mr. Alexander Moore, of Glasgow, having resigned the secretaryship, Mr. W. G. Williams, the assistant-secretary, has been appointed in his place. The directors have taken advantage of this change to make arrangements with Messrs. John Taylor and Sons (involving no extra expense to the company), by which the whole business of the company is transacted in London, with the exception of having, in compliance with the Memorandum of Association, a registered office in Glasgow.

The CHAIRMAN said: Gentlemen, in moving the adoption of the report and accounts my labour will be very light indeed, because, of course, as you are aware, and as you remember I told you at the last meeting we held, that our efforts—until we called you together to meet us and hear our report—would be practically more of exploration than of results in the shape of dividend; and I am happy to tell you that so far as we have progressed we are thoroughly satisfied with the work which has been done. First of all, we have been very ably

assisted by our friends the Messrs. Taylor—(hear, hear)—who have advised us, think very prudently indeed, and as we told you that we had no practical knowledge of mining ourselves, we felt the best thing we could do was to put ourselves in the hands of the most competent and responsible people we could find in the City of London, and in doing so we felt that we did the best we could for the shareholders. (Applause.) Under their direction we have appointed Capt. Bennetts; and his attention to the interests of the company has been as great as we could desire; and with regard to the efficiency with which the work has been done I speak in no measured terms at all. We have now come to the point at which the exploring and putting the mine into working order has once again terminated, and we have at last got some results. As we told you in the report lately issued, we sincerely trusted that we should be able to report to you at the time of this meeting to-day the sale of the first shipment of ore we had received; but I am sorry to say—owing to the sudden severity of the Canadian winter, the Dominion steamer in which the regulus was to be shipped got frozen up, and the regulus has had to be shipped by another means, but it was dispatched on the 17th of this month, therefore we are expecting in about another week to have it, and, as we have done before, we hope to announce in the public prints any information for the benefit of the shareholders. The telegram containing the information as to the shipment contains an announcement that we don't feel we should be justified in withholding from the shareholders, so I shall read it in the exact words of the telegram. I cannot give you any information as to the value of this telegram until we get the report. It is as follows:—"Matte shipped seventeenth, Bolton improved—(that means the Bolton Mine, of course). Francis said, sample rich silver assay follows." Messrs. Taylor tell us that rich silver is often found in copper mines, therefore this may be an extraordinary good news, or it may be many other discoveries, rather disappointing. You must therefore take it for what it is worth, and wait for the assay, which will be published. As soon as we get the information we communicate it to the papers, and we shall send it to the Stock Exchange on this occasion, as I feel it is a thing it is our duty to announce. I hope it means good prospects for the company. It shows that the way in which Captain Bennetts has conducted the operations has been a prudent one. We have now practically two of the mines in working order, and we intend to push forward now with all the vigour that we possibly can. As the report tells you, the difficulty we had at first in not having the necessary funds to work with has been got over by the liberal response to the appeal which the directors made to the shareholders for subscriptions for the debentures, and as the whole of these debentures were placed amongst the shareholders, therefore the directors feel that in any benefit that the debenture holders got in the rate of interest it is given to the shareholders themselves, and not to outside parties. I think that I need not say anything more on the report and accounts. I shall only be most happy to reply to any questions which any of the shareholders would like to ask, because we want our partners in the concern to be as *en fait* and *accountant* in the affairs of the company as we are ourselves. I beg to move the adoption of the report. (Applause.)—Mr. A. J. LAMBERT seconded the motion.

Mr. WILLIAM ABBOTT: Mr. Chairman and gentlemen,—As no other shareholder seems desirous of addressing you, I presume they are so satisfied with what you have just announced that perhaps their powers of speech are not equal to the occasion. (Laughter.) I must, however, express my disappointment that you have carried your desire for economy so far that the important communication of which you have just given us a shadow should have been so limited in the telegram that we really do not know whether it is of great importance or minor importance. I think, Sir, with all due deference to you, that you should have telegraphed to Captain Bennetts, and informed him that your hungry proprietors would meet you to-day, and that you would, therefore, be glad to give them some special information. If, however, the news comes to you to-day or shortly I hope you will not hesitate in sending a special circular to the proprietors. (Hear, hear.) You have also carried economy, I think, a little too far in shipping the ore by water. However, I exonerate you from any desire to benefit the Canadian railways—(laughter)—but the Grand Trunk was quite near to you.

The CHAIRMAN: It was sent by the Grand Trunk, and afterwards to go by the Dominion steamer. The Grand Trunk, you know, does not come to Liverpool.

Mr. W. ABBOTT: I have nothing more to say on that point, except to remark, in passing, that I am glad that 6,000,000 of grain is locked up in the ice. It ought to have been sent by railway. (Hear, hear.) With respect to the 35,950l. standing at the debit of profit and loss account, seeing that our prospects are so much better, could we not reduce our capital by 10s. a share, or better by 14s. a share, so as to bring our assets more in accord with the total amount paid up? (Hear, hear.) I throw this out for your consideration, because the sooner that is done the better, for, supposing my anticipations—entirely apart from those of the board—are correct, there is every probability that you should be able to go to the full par value of 44s., and you could not then commence to reduce the capital—shareholders would not have it; and still that 35,000l. will be a leeway to make up against our future profits. I think you will see the importance of at once passing a resolution authorising the directors to take immediate steps with the view of the reduction of our capital. (Hear, hear.) The other point to which I wish to refer is the item of expenses with reference to the Glasgow office. Now, the Glasgow office in through the directors of this company, and the Glasgow directors, I can safely say, have been the bone of the enterprise; and I, therefore, Sir, I wish to hear from you whether the Glasgow office has been entirely abolished. If not I must propose a resolution that it shall be immediately abolished. (Applause.) There is just the skeleton of an office, I believe, in Glasgow, and that skeleton has done more harm than you have any idea of. The secretary there has been communicated with by some of my friends as to the prospects of the company, and the answer has been a stereotyped one—"It is utterly worthless, get rid of your shares without a moment's hesitation," and some of them, to their detriment and ultimate loss, have got out of their holdings. I hope you will also take this into your consideration, that this is really a Scotch company. Numbers of shareholders who have recently joined this company are not aware of the fact that to the gentlemen now in office they are indebted for rescuing this company from the hands of the wreckers, therefore the less association we have with Glasgow the better for you. (Applause.) I see no mention of any remuneration to the board, but I shall be very happy to be the means of proposing it later on. (Applause.)

Mr. BLADON regretted that Mr. Abbott had not spoken with regard to the prospects of the company, for Mr. Bladon believed there was really a good foundation for hope as to the future. (Hear, hear.) With all due respect to Mr. Abbott, he hoped the directors would not be premature as to reducing the capital, because if the company turned out anything like he expected it would they would soon be able to wipe out the debt balance.

Mr. W. ABBOTT: I suppressed my feelings as to the future of the company, but I am glad to hear the hon. proprietor give us his opinion. If I did not believe in the company I should not have recommended it as I have, nor made myself responsible for the whole of the enterprise. (Applause.)

The CHAIRMAN: As to the reduction of the capital, that matter shall have the consideration of the board, and what Mr. Abbott and Mr. Bladon have said shall be fully and carefully considered. With regard to the matter of the telegram, I may say this that Capt. Bennetts has been so precise and careful in giving us the earliest possible intimation of everything that is going on that we did not think it necessary to telegraph again to him, as he said "assay follows." Any hour we may have that information; and, as Mr. Abbott suggested, that shall be communicated to the shareholders by special circular, and also to the papers. As to the office in Glasgow, the directors are provided in the Memorandum of Association (which cannot be altered) that the registered office of the company "shall be situated in Scotland." I may just briefly refer to what Mr. Abbott said on the question of this company and its representative in Scotland. At the time Mr. Moore was secretary of the company that was the gentlemen who called us together, when Mr. Lambert and I went to Glasgow to liquidate the company and appoint Mr. Moore as receiver. (Laughter.) I think the prudence we showed in preventing that being done was certainly considerable, and it is very gratifying when shareholders acknowledge that a prudent step has been taken by directors. (Applause.) Directors are often abused, and it is very gratifying that they are occasionally praised. At that time you could not have got half-a-crown a share for 100 shares, but the proof of the pudding is in the eating, and I hope the sanguine expectations of my friends will be fully realised—I shall be greatly disappointed if they are not. (Hear, hear.) We have put the matter in the hands of Mr. Carswell, an accountant in Glasgow. He simply keeps a register of the shareholders, and receives the transfers, but the whole of the work is done by the Messrs. Taylor here. Mr. Carswell is under the Messrs. Taylor, and they pay his remuneration, so that no extra cost is incurred in regard to that.

The report and accounts were then unanimously adopted.

Mr. W. ABBOTT: You need not have the office in Glasgow. The gentlemen in Glasgow do not deserve the slightest consideration. (Hear, hear.) The shares are held mainly in England and Ireland, and if you would erect a shanty at Berwick-on-Tweed it would satisfy me. (Laughter and applause.)

The CHAIRMAN: All you have to do is to keep a register of shareholders, and a place where a writ could be served.

Mr. COOK thought that Mr. Abbott deserved great praise for having supported the company, and recommended his friends to take shares. (Hear, hear.)

Mr. RICHARD TAYLOR: The Glasgow office which has done this mischief is put an end to completely—(hear, hear)—and through the kindness of Mr. MacLure we found a gentleman whom he knows and vouches for completely, and for a very small remuneration this gentleman keeps what is necessary—that is an office with the register of shares, and we have to supply from London the information necessary for him to keep the book, and we pay out of the salary the directors give us. He is a person who would not pretend to give any information about the mine at all. (Hear, hear.)

Mr. W. ABBOTT: That is perfectly satisfactory.

On the motion of Mr. BLADON, seconded by the CHAIRMAN, the retiring director, Mr. J. M. Mackintosh, was re-elected.

The CHAIRMAN: We wish to terminate the Glasgow audit and have it done in London, and we leave it to the shareholders to suggest an auditor.

Mr. W. ABBOTT: Before that is done I certainly think it is our duty as shareholders to make some special acknowledgment to the board, who, as my worthy co-proprietor has stated perfectly truly, have done so much in rescuing the company. I believe we are now really on the dawn of success, and, therefore, I desire that we should record our hearty thanks to the directors in a more substantial form than the mere customary vote of thanks. How many directors are there?—The CHAIRMAN: Four.

Mr. W. ABBOTT: Had not Mr. Adam Murray retired?—The CHAIRMAN: No, but he wished to.

Mr. W. ABBOTT: Are three directors enough?—The CHAIRMAN: We think so.

Mr. W. ABBOTT: Well, I propose that the remuneration of the directors for the past year be fixed at 300 guineas, and that all consideration of future remuneration be left for subsequent meetings, because I have exalted views of what you may be able to do for us, and we may be able to do for you. (Applause.)

Mr. SANDERSON seconded the proposition, which was carried *nem. ds.*

The CHAIRMAN having acknowledged the vote in a few well-chosen words,

Mr. RICHARD TAYLOR said: With regard to the telegram, I do not attribute it to economy, but to the caution and prudence that we know always regulates the conduct of Captain Bennetts. (Hear, hear.) He was, I may say, brought up under my own eye until he was sent to Canada, and that I know is his character. You are aware that the St. Francis Mine and the Bolton Mine had been abandoned by the predecessors of the present directors. The description of the Bolton Mine shows us very clearly that it is a mine which affords a great promise of being a good copper mine. The St. Francis Mine is also a copper mine, and in his report Captain Bennetts describes that having resumed driving the old level he had met with a small leader of copper ore—grey and erubescite—the same as we have at the Ookiep Mine of the Cape Copper Company, in the Cape of

Good Hope. Now he says in this telegram that in the adit we have rich silver ore. That may be grey copper ore containing a large alloy of silver; that is by no means an uncommon ore, and I am inclined to think that that is what it is. He has found ore that contains silver, but had not had it assayed, and therefore he waited to give some detailed information until he was able to do so—that is until the ore should have been assayed, and he could tell us the value. (Applause.)

Mr. SANDERSON moved that Mr. Blackstone Baker should be appointed auditor of the company, and that his remuneration be 20 guineas.

Mr. W. ABBOTT, in seconding the motion, remarked that Mr. Baker had recently retired on a pension from the secretaryship of the Great Western Railway of Canada.

The CHAIRMAN thought they could not put the audit in better hands. Mr. Baker had been for a long time interested in the company—he was, in fact, an original shareholder—and was, of course, a shareholder now.

The motion was carried *unanimously*.

On the motion of Mr. W. ABBOTT, seconded by another shareholder, a cordial vote of thanks was passed to the Chairman and directors, and the meeting then closed.

WHEEL RUSSELL MINING COMPANY.

A meeting of shareholders was held at Tavistock on Dec. 16.

Mr. SAMUEL LANGLEY (of Bristol) in the chair.

The PURSER read the notice convening the meeting, and the statement of accounts for the four months, showing a balance of 428l. 7s. 2d. It was resolved to make a call of 1s. 6d. per share, which would not only be sufficient to pay off all existing liabilities, but with the aid of ore returns would enable them to pay the costs for the next four months, as the agents stated they saw their way clear to sell 250l. worth of copper by the end of February.

The CHAIRMAN congratulated the company on their present improved position. They had effected an arrangement with the South Bedford Company, by which they had obtained a valuable portion of their sett, and they had procured from the Duke of Bedford the promise of an enlarged sett, including the East Russell Mine, which formerly returned large quantities of rich ore, and from which frequent applications had been made to his Grace, but without avail. The Chairman further remarked that several of the points in the mine were looking much better, and altogether their prospects were more cheering than for some time past.

Messrs. S. Lang, T. Hamilton, T. Stephens, E. Crocker, T. Grenfell, G. Prout, and H. Reynolds were re-elected the committee of management for the next four months.

It was resolved to increase the salary of the consulting agent, Capt. Gifford, from 2l. 2s. to 4l. 4s. per month.

A cordial vote of thanks was given to the Chairman not only for his conduct in presiding but for the warm interest he has taken in the general business of the company.

GREAT HOLWAY.—The annual meeting was held on Monday last, but immediately adjourned. The report presented was in every respect excellent.

SOUTH CARADON.—At the meeting on Tuesday (Mr. Richard Hauke in the chair) the accounts showed a credit balance of 1666l. 2s. 11d. The profit on the three months working was 8l. 11s. 6d. Capt. John Holman reported that the mine continues to produce large quantities of rich quality ores. They have completed the sinking of the two shafts and are engaged in driving towards the lodes at deeper levels; but have not intersected them as they anticipated at the last meeting but had hoped to do. They will continue to drive in this direction with all speed, and confidently believe they will meet with good results, which will greatly help them in keeping up their returns.

(For remainder of Meetings see this day's Supplement.)

MINERAL WEALTH OF GEORGIA.

The mineral wealth of the State of Georgia has frequently been incidentally referred to, and now an interesting paper, contributed to the New York Mining Record by the Rev. W. P. Harrison, removes all doubt as to the resources of the State being worthy of development. An important interest in Georgia at the present time, with intimate relation to the developments of iron manufacture, is the making of fire-bricks. The nature of this article, the freight being an all-important item, requires a home supply if it can be obtained. There is an abundant supply of excellent fire-clay within six miles of Atlanta, Georgia. The clay lies in extensive beds near the surface, is quite free from iron, and in the neighbourhood is an abundant supply of quartz, necessary for mixing with the clay. At a cost not exceeding \$25 per thousand an article can be made there equal to the best London bricks or any manufacture in this country. Persons acquainted with the business can readily find a market now for a large supply, and the prospect enlarges constantly. This may not seem to possess very attractive features to capitalists, but this country will not long have an opportunity for reproaching the South for backwardness in manufactures. The energies of the Southern people are being directed to the development of their resources, and they will welcome any and all persons who sympathise with them in this cause.

Near the city of Augusta, Georgia, but in the State of South Carolina, is an extensive deposit of kaolin, or porcelain clay. It is of the finest quality known to mineralogists. The deposit is equal to any demand upon it for a hundred years. It has been shipped to Northern manufacturers for some time past, and the establishment of a manufactory at that point is only a question of a few years. There is a well grounded belief that this clay has been used to adulterate flour, being as white, soft, and pure from gravel as wheat flour itself. This accusation is not made against the owners of property but against some of the parties who purchase the material and have it shipped to the North. How much truth there may be in the statement Mr. Harrison did not know, but if terra alba is ever used for this purpose the Carolina clay would present a strong temptation to unprincipled dealers. There are many other deposits of fine clays in Georgia and the border of South Carolina, and the attention of the public should be called to them.

Some fine specimens of pure plumbago have been found upon the surface of the ground in Cherokee County, some 40 miles north of Atlanta. One of these specimens weighs some 4 or 5 lbs. To what extent this mineral exists there Mr. Harrison is not able to say, but the peculiar position of isolated specimens warrants the belief that a large deposit exists at this point. The constantly changing materials used in the arts furnish no data to estimate the value of this mineral, and yet there would seem to be some uses for which it is qualified, and from which it cannot be displaced. The subject is worth a little time and attention.

Silver ore, in the form of argentiferous galena, has been found at various points in the State. Near Gainesville, in Hall County, a mine has been opened. The ore has been estimated at \$75 per ton in value. Mr. Harrison is not informed as to the success of the experiment in working this ore. The supply he thinks, from a casual examination, is too small to warrant any great venture at this point. There are, however, various districts on the border of Tennessee in which intelligent exploration may result in important discoveries. The great drawback to mineral discovery in Georgia has been the extravagance of well-meaning but indiscreet persons, who have encouraged hopes which have not been crowned with success. The mineral interest in Georgia is undoubtedly a profitable one, but it is not a subject for sensational display, and the reckless adventures that have ruined so many men are not encouraged by the people of the State. That silver exists in paying quantities he thinks beyond question. But this is an opinion, the fact has yet to make its appearance.

There is no doubt as to the existence of diamonds in the State of Georgia. Several have been found in Hall County. Near Gainesville there is an extensive deposit of itacolumite, or flexible sandstone, or, to be accurate, a laminated granular or quartz rock, flexible in thin slabs. This is the formation which yields the diamond, and its existence proves the presence of the precious stone. Pseudomorphs in quartz are plentiful, and the expenditure of a little labour and capital under competent supervision may result in valuable discoveries.

Asbestos, manganese, corundum, and many other valuable minerals exist in considerable quantities, but the gold deposits of Georgia are the most important sources of wealth to the States; upon this subject also it is necessary to speak guardedly. He has seen ore taken from the mine worth in its virgin state \$33,000 per ton; but this was a pocket which yielded only \$6000 before it was exhausted. Some parties have lately obtained \$3700 in gold with \$50 or \$60 expense. The gold interests of the State have been seriously injured by injudicious enterprise, which have even brought their real value into question. The principal deposits of gold are in quartz rock distributed irregularly, but with a singular uniformity at the same time. The amount of gold varies from 40c. in the ton to \$30,000. The chief material for the mill is a quartz running from 80c. to \$75 or \$100 to the ton. These veins of gold bearing quartz vary in size from 4 in.

to 14 ft. They run in all directions, the general bearing from north-east to south-west. The gold is sometimes visible to the eye, interspersed throughout the rock in grains, nodules, and lumps. This, of course, is the most valuable ore, and is comparatively scarce. The large mass of ore has no visible gold, but in minute quantities the precious metal exists, and yields readily to treatment. He has said that the quartz veins were remarkable for uniformity; by this he means that there is no barren quartz in these veins. However little every ton of ore yields some gold, and it is possible in a very short time to learn precisely what amount of gold may be expected from a given amount of ore.

After a careful examination of the section known as the gold region of Georgia he has no hesitation in expressing the opinion that there are at least \$500,000,000 of gold within 300 ft. of the surface of the earth. In a radius of 20 miles from Dahlonega as the centre he thinks \$100,000,000 may be extracted in the same distance from the surface. The extraction of gold is reduced in this region to the minimum of cost. Taking the quartz out of the earth, removing it to the mill, crushing it, amalgamating the gold with the quicksilver, and extracting the gold, all these operations are performed at a cost not exceeding 30c. per ton of ore. He knows that this statement will excite surprise. It is well calculated to do so; but having seen the books of the Hand Mining Company in Dahlonega, Georgia, he can positively affirm that the cost of raising, crushing, and washing a ton of ore is not more than 30c. Labour is cheap, provisions plentiful, water-power abundant, and the peculiar conformation of the country furnishes a head of 256 ft. of water available for removing the debris from hillsides, thus exposing the veins of ore. There is a small river, which is carried 22 miles by means partly of a canal and partly by an iron pipe, thus accumulating a hydraulic power competent to wash down immense masses of earth. This water-power is, he believes, leased by its owners on very moderate terms, and forms a valuable factor in this mining region. He maintains there is here an element of certainty frequently absent elsewhere. Given a number of tons of ore the proprietor can tell what amount of gold he will obtain; he can tell precisely what the cost of its extraction will be, and calculate his profits with as much certainty as he can look for a dividend from any investment in real estate, or in stocks or railroad corporations.

FOREIGN MINING AND METALLURGY.

Mild rainy weather which has prevailed in Belgium has not been very favourable to the Belgium coal trade. There has, nevertheless, been no great feebleness in the market; prices have been fixed for a time, and considerable orders are being worked out, so that a change cannot well take place all at once. In France quotations for coal have been rather weaker, the consumption being reduced by exceptionally mild weather. The imports of coal at Havre in the first nine months of this year amounted to 343,332 tons, against 304,489 tons in the corresponding period of 1879.

Pig has been supported with tolerable firmness in Belgium. A Luxembourg syndicate has advanced its rates 1s. 8d. per ton. Luxembourg pig delivered at Charleroi cannot now be obtained for less than 2l. per ton. English casting delivered at Antwerp has made about 2l. 3s. per ton, while pig for hard iron has brought 2l. 4s. per ton. Ordinary plates are worth nominally 6l. 16s. per ton in Belgium, and some works are still selling them at that price, but they might certainly be obtained at 6l. 12s. per ton, and even at 6l. 8s. per ton. Tin-plates are maintained at 10l. per ton, but some works which have not too much to do would accept 9l. 12s., and even 9l. 8s. per ton. The Angleur Steelworks Company have just concluded a contract for 3186 tons of steel rails with the General Secondary Railways Company. The Belgian construction establishments are pretty well off for orders, and can afford to wait for the orders of the State. The Asturian Railway Company has ordered 58 turn-tables in Belgium; this order has been divided between the Sclassin Company and the International Company (Rohn). The launch of the John Cockerill Company's steamer, the Archduke Rodolph, passed off satisfactorily.

The rise recently noted in iron at Paris has become more decided. The requirements of consumption are considerable and can scarcely be satisfied all at once. The existence of Belgian competition must not be forgotten, however, when any attempt is made to push prices up still further. Contracts have been let for 20,000 tons of steel rails for the French State Railways. The lowest tenders were those of the St. Chamond Forges Company, 10l. 10s. per ton at Beillant, and 10l. 6s. 8d. per ton at Aix; the Creusot Forges Company and the Terrenoire Company, 9l. 16s. per ton at Jougé; the Châtillon and Commentry Forges Company, 9l. 8s. per ton at Brou; and the Firminy Company, 9l. 19s. 2d. per ton at Elbent. The Paris, Lyons, and Mediterranean Railway Company has just ordered 12,000 trucks to meet the growing requirements of its traffic. When this company has received all the new plant which it has ordered it will possess 110,000 trucks and 2030 locomotives! No fewer than 130 new locomotives have just been ordered by the company to be delivered by the close of next summer. The imports of iron minerals into France in the first 10 months of this year amounted to 981,430 tons. To this total Algeria contributed 261,500 tons; Belgium, 233,808 tons; and Spain, 280,705 tons.

The general condition of the German iron trade has not varied, but a favourable change will, it is expected, be shortly witnessed. The blast-furnaces appear to dispose of their products tolerably freely, but orders are not over abundant for rolled iron. Bars remain at about former rates; plates are rather firmer. It appears that 58,611 tons of steel rails were ordered for German railways in 1879. The Oels-Gnesener Railway Company has ordered 8000 tons of steel rails, at 8l. per ton.

EXTENDED APPLICATION OF CHROME ORE.

THE MINERAL TANNING PROCESS.

For some short time past the Eglington Chemical Company of Glasgow have been introducing an excellent quality of leather tanned by Dr. Heinzerling's process, and from the testimonials received the article appears to give general satisfaction. The process has been in use at the tannery of Messrs. Hosch and Vomhof, of Biedenkopf, for over two years, and they state that their experience of the chrome-tanned leather enables them to say that it is produced ready for the market within four or five weeks; it is tanned at much less cost; it has several properties which render it superior to bark-tanned leather, the upper leather being more elastic even after having been wet, much tougher, and more durable; it is closer and finer in the grain than bark-tanned leather; and that the weight is equal to that of bark-tanned leather. Altogether the new chrome-tanned leather must be a valuable material to consumers as well as manufacturers.

The invention will be of special interest to the readers of the *Mining Journal* in more than one respect. In the first place, it will probably lead to an increased demand for chrome ore; and secondly, it will permit of the introduction of cheaper driving belts. With regard to the latter, Messrs. Jungst and Co. write that they have for two years used Heinzerling's chrome-tanned leather for driving belts in their spinning mills, and for this purpose it surpasses their expectations. Dr. John Clark, of Glasgow (City Analyst) has made some careful analyses to ascertain the comparative strength and unsolubility of chrome-tanned and best bark-tanned leather, and states that he has made a careful analysis of six samples of chrome-tanned leather, labelled respectively "foreign bend," "English bend," "hide butts," "strap butts," "buffalo hide," and "calf skin," for the purpose of ascertaining the total quantity of chromium which they contain, and the amount which is extracted by the action of water under different circumstances, and the results were decidedly in favour of the chrome-tanned. The quantity of bichromate of potash which he was able to dissolve out of the samples of chrome-tanned leather, even by steeping in water for a week, is very minute, but even this quantity, small as it is, will probably become less by the reducing action of the organic matter on the chromic acid. In any case he is of opinion that the remaining chromium compound in the leather will not be dissolved out by any treatment to which the leather is likely to be subjected.

The rapidity of the mineral process of tanning is marvellous. The longest period claimed for the process of tanning by this method is only some three or four weeks, which, when compared with the time necessary for bark tanning methods, seems something extraordinary. No doubt we have the rapid tanning processes of the United States with the bark of the hemlock tree—a species of fir—which produces leather now well known in the British market, but not in less than from four to six months. The operations of chrome tanning seem so simple and inexpensive as well as rapid, that there is little doubt, if successful, it will create a revolution in the leather trade. It is asserted on behalf of the chrome-tanned article that it is superior in many respects to bark tannage. This need not be conceded till larger experience has been had of the new article, but there is reason to believe that it will well serve many useful purposes, although it may not put the ancient tannages out of the field. The energy which has been displayed in the matter by Mr. W. J. A. Donald, the manager of the Eglington Company, cannot be too highly commended, and it is not doubted that the result will be equally gratifying to the producers of chrome ore and bichromate of potash, as well as to all interested in securing a cheap supply of leather.

THE GOLD FIELDS OF CANADA.

There seems to be a great probability that the Dominion will obtain a share of the British capital at present available for the development of gold mines, inasmuch as important discoveries are announced in various districts. A fine bar of gold from the Yarmouth Greenpot Mine has been exhibited by Mr. Henderson, the secretary of the company. It weighs 42 ozs.—4 ozs. less than the last specimen from that mine exhibited here, but is much purer, and is worth about \$800. The company intend shortly putting in machinery that will crush 15 tons per day instead of 3 tons, as at present. This can be done at but trifling cost, and with but few additional hands. The prospects of this mine are said to be excellent.

Work at the Duncan Mine, Thunder Bay, which is worked by a Boston Company, is, according to the North Shore Miner, progressing rapidly, and we are looking for a favourable report of the workings of the drill. The vein in the bottom of the shaft is rapidly improving. The drill has not yet reached the vein below the sinking, but is nearly down to a point level with it. Everyone is on the *qui vive* for a rich strike. If indications are any guide we shall have another bonanza to report soon. Mr. Church and his party are stated to have been very successful in the prospecting expedition. He brings back about 4 ton of excellent gold-bearing quartz, and is more than ever assured of the value of his discovery. A longer account of this new and valuable gold discovery is promised a week hence.

CHEMICAL COAL.—The essential feature of the new chemical coal invented by Mr. JULES LEFRANC, of Paris, lies especially in the employment for its preparation and in its composition, of the carbonates in general, and more particularly of carbonate of soda or of nitrate of soda or nitrate of potash. In the process of manufacture he grinds 100 lbs. of charcoal in the shape of charcoal dross and cinders, and mixes therewith about 80 lbs. of liquid pitch or tar, and about 15 lbs. of carbonate of soda dissolved in about 15 pints of water. He thus obtains a pasty mixture, which he moulds according to the dimensions of the blocks to be made. The blocks are then dried, and he finally submits them to carbonisation, the effect of which is to expel the gases, and at the same time to harden the blocks, which renders them more adapted for use. The carbonate of soda may be replaced by carbonate of potassa or chlorate of soda, or nitrate of soda, or nitrate of potassa. During the carbonisation the nitrogen is disengaged, the oxygen combines with the carbon, and the carbonic acid produced unites with the soda and forms the required carbonate of soda. In the same way carbonate of potassa may be produced by taking chlorate of potassa as an ingredient or nitrate of soda. Other carbonates may be employed in like manner.

THE ENGINEERS CLUB OF PHILADELPHIA.—This club, which promises to enjoy a long career of usefulness, is now considered firmly established. It has just commenced the issue of its second volume of Transactions, and the critical period of demonstrating the utility of the society and establishing the fact that it is equal to the requirements has passed, and the growing value of the contributions to its proceedings is evidence of an increasing interest. The club has commenced to take action in important matters, and is gaining recognition not alone in its native city, but beyond it is fast making friends. The first number of the new volume has valuable additions to current technical literature. Many of the papers already before the club display considerable merit.

AMERICAN MINES AND ENGLISH CAPITALISTS.—Some interesting observations upon Anglo-American concerns are made in the circular of Mr. J. J. West, of Chicago, and their reproduction may prove advantageous to British capitalists. He states that with an occasional exception, English capital invested in America has not paid. Excessive capitalisation, mines stocked for hundreds of thousands of pounds, want of due oversight an proper economy in working and managerial expenses, incompetent or dishonest management have, by far, more often caused loss of money to English and American investors than a failure or lack of richness in the mines. Large profits are being made in American gold and silver mining by individual capitalists, and by carefully managed companies organised on a fair basis. As an illustration: The George Mine, at Rico, Colorado, is owned by the Rico Silver Mining Company. A rich strike in the mine would enable the company to return very large profits to its shareholders; but supposing the George Mine to belong to an English company, organised according to the usual London financial plan, a rich strike might prevent the undertaking from being a failure, but no large profits would accrue to the shareholders. The young State of Colorado, owing principally to its mines of silver, gold, lead, copper, iron, and coal, and in part to its splendid climate, its fertile valleys, and its great ranges of pasture land, which furnish food and supplies cheaply to the mines, is advancing in wealth, architecture, commerce, manufacture, art and science, with a progress unparalleled in history.

REFINING PETROLEUM WITHOUT HEAT.—By the old process the refined article at a fire test of 110° costs at the wells about 3½d. per gallon, the process involving a loss of from 30 to 65 per cent. In bringing this grade of oil to a test of 150° it loses 30 per cent. in the process of distillation; to raise it to 175° it loses 45 per cent., and to 185° 65 per cent. By the new patent process at present being tested in the United States the oil is treated without heat, and it is claimed, loses nothing; in fact, in some oils there is said to be a positive gain in weight. Oil at 110° upon being raised to a fire test of 150° is worth more than double, and if raised to 185° it is worth more than three times the price per gallon; the cost of raising it to either of these tests is ¾d. per gallon. Here also is another advantage over the old system, as by the present method of distillation the profit on oil at a fire test of 110° is only half a cent. per gallon, and at a test of 150° the profit is the same, whereas by the new process the oil loses nothing in the manipulation—the profit is in a ratio to the number of degrees to which the fire test is raised. In the process the oil is decolorised, and at the same time the illuminating quality is improved, so that the oil burns longer and brighter, and this is effected without the aid of any heat whatever.

COLLIERY EXPLOSIONS AND AMATEUR ENGINEERS.—Mr. Henry Johnson, of Dudley, in criticising the observations of Mr. Plimsoil, said that he regretted to have to find fault where the motives were good, but when men wrote on subjects they did not understand they were likely to do more harm than good. In the first place, Mr. Plimsoil wished to make carburised hydrogen visible like smoke, or make it indicate itself by its own chemical action. In his (Mr. Johnson's) opinion the safety-lamp did all that. Therefore there was no need for the papers, with acetate lead upon them, to show the carburised hydrogen. Then Mr. Plimsoil spoke of a vertical recess in the coal, glazed, and enclosing a child's talloon of collodion. Such a plan was not feasible: no glass would stand the strain. Then Mr. Plimsoil's theory of absorbing the gas was another fallacy. How he would absorb all the gas in an extensive mine was more than he (Mr. Johnson) could tell. Mr. Plimsoil asked whether the gas could not be exploded regularly, and in fixed quantities. Well, that was a plan in use 60 or 80 years ago, and the accidents were very numerous from it. Before ventilation was understood, a man, well wrapped up, used to venture into the gas and fire it. Mr. Plimsoil knew so little of the subject as to speak of this, and to say that with the atmospheric air and with the gas the latter would syphon itself out of the shaft. Mr. Johnson, in conclusion, regretted that Mr. Plimsoil should have written the article without consulting a practical man. The report of the meeting of the South Staffordshire and East Worcestershire Institute of Mining Engineers, at which this discussion took place, is in type, and will appear next week.

HOLLOWAY'S OINTMENT AND PILLS.—Sudden changes of temperature sorely try all persons prone to rheumatism, sciatica, the dolores, and many similar maladies scarcely less painful, though of shorter duration. On the first attack of stiffness or suffering in any muscle, joint, or nerve recourse should immediately be had to fomenting the seat of disease with hot brine, and rubbing in this remarkable ointment, which will assuage the uneasiness of the part, subdue inflammation, and reduce the swelling. The pills, simultaneously taken, will rectify the constitutional disturbances, and renew the strength. No remedy heretofore discovered has proved so effective as the ointment and pills for removing gouty, rheumatic, and scrofulous attacks, which afflict all ages, and are commonly called hereditary.

BRITISH MINES.

to copper ore per fathom. There is nothing new in the 100 end. No. 1
stop, in back of 100 level, is worth 9 cwt. of lead ore per fathom: No. 2, 8 cwt.
No. 3, 9 cwt. We are now driving east in the bottom of winze sunk below this

productive. Judd's engine-shaft, sinking below the 65, is holed to the 80. We estimate the raising for December at 75 tons.

BUENA VENTURA.—Dec. 8: The lode in the 40, driving east of Cox's engine-shaft, yields good stones of ore occasionally. The 50, driving in the same direction, is suspended at present. The lode in the 50, driving west of Cox's engine-shaft, is in contact with a strong cross-course. In the 40, driving east of Cox's engine-shaft, a good length of productive lode was opened up in the past month, but it is poor at present. The 20, driving east of Taylor's engine-shaft, has improved a little in the past few days, and is worth $\frac{1}{2}$ ton per fathom. The lode in the 20, driving west of Taylor's engine-shaft, and producing $\frac{1}{2}$ ton per fathom, has fallen off in value during the past week. The lode in Taylor's engine-shaft, sinking below the 20, is not so productive as it was, its present value being $\frac{1}{2}$ ton per fathom. No. 3 winze, sinking below the 10, and worth 1 ton per fathom, will be holed to the 20 in the present month. The ordinary works at surface are going on very regularly, and the tributors returned a moderate quantity of ore for the past month, and are doing fairly well at present. The machinery is working cheaply and well.

ALAMILLOS.—The lode in the 130, driving east of Taylor's engine-shaft, is sufficiently large, and valued at 1 ton per fathom, but not so productive as it was. In the 130, driving west of the same direction, the lode is also strong, and worth $\frac{1}{2}$ ton per fathom. The 115, driving west of Taylor's engine-shaft, is quite unproductive at present. The lode in the 85, driving west of San Adrián's shaft, is regular and of a promising appearance, and yields occasional stones of ore. The 60, driving east of San Victor's shaft, has very much improved of late, and produces $\frac{1}{2}$ ton per fathom. The 70, driving east of San Victor's shaft, has also changed for the better during the past fortnight, and is valued at 2 tons per fathom. In the 70, driving west of San Victor's shaft, there is a very good lode in the upper part of the level, but small in the bottom, worth 1 ton per fathom. The lode in the 50, driving west of Henty's cross-cut, producing 1 ton per fathom, is not so productive as it was a few days since. The lode in Manuel's winze, sinking below the 60, is very wide, and we expect to find the best part on the north side when cut into. The lode in Sisto's winze, sinking below the 50, and producing 2 tons of ore per fathom, has improved, and bodes well for the next level that will soon be under it, and is also good. The weekly weightings of ore were kept up without difficulty during the past month, and the stops in that time did not undergo any change of importance. The works at surface are on very steadily, and the machinery is in good working order. We estimate the raisings for December at 175 tons.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, DEC. 23, 1880.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde	2 11 2	11 4 5	English, ingot, f.o.b.	94 0 0	
Scottish, all No. 1	2 13 0		do refined	96 0 0	
Bars, Welsh, f.o.b. Wales	5 5 0	5 7 6	Australian	90 15 0	91 0 0
do in London	5 15 0	5 17 6	Banca	nom.	
do Stafford	6 15 0		Straits	90 15 0	91 0 0
do in Tyne or Tees	5 12 6	5 15 0			
do Swedish, London	10 0 0				
Rails, Welsh, at works	5 5 0	5 10 0			
Sheets, Staff., in London	3 0 0				
Plates, ship, in London	7 15 0	8 0 0			
Koops, Staff.	7 0 0				
Nail rods, Staff., in Lon.	6 0 0	6 15 0			
English, spring	13 0 0	0 10 0			
do cast	30 0 0	0 40 0			
Swedish, keg	15 0 0				
do fag. bat.	15 10 0				
LEAD.					
English, pig, common	15 0 0	15 5 0			
do L.B.	15 0 0	15 12 6			
do W.B.	16 0 0				
do sheet and bar	16 0 0				
do pipe	16 10 0				
do red	17 10 0				
do white	22 0 0	0 24 0			
do patent shot	18 0 0				
Spanish	14 10 0	14 15 0			
Metals, per cwt.	15 0 0	15 0 0			
Ore, 10 per cent. per ton	20 0 0	25 0 0			
QUICKSILVER.					
Flasks, 75 lbs., war. (nom.)	6 5 0	6 7 6			
SPELTER.					
Silesian	15 10 0	15 15 0			
English, Swansea	15 5 0				
Sheet zinc	19 10 0	20 10 0			

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; 1X 8s. per box more than 10 quoted above, and add 6s. foreign X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—With the exception of retail trade, business during the Christmas week is usually quiet, and since our last the metal market has, for the most part, remained inanimate. In common, however, with the general cheerfulness of the season the tone remains fairly buoyant, and dulness in business rather than weakness in prices has been the general characteristic feature of the markets. Any activity in business at Christmas time is greatly appreciated, and especially when trade during the year, which draws so near its close at that time, has been brisk, and profits large. Considering the greatly improved and satisfactory business which has been transacted throughout the whole of the present year compared with that for the few previous years, we cannot but feel that on this score there are very few instances where the enjoyment and pleasure of the season will be marred; and, as bright prospects also tend to stimulate the cheerful tone, even to a greater extent than the amount of business which has already been done, we are glad to be able to express the strongest hope that the future of the markets will fully attain the most sanguine views which have been anticipated. Referring to past business, if a steady and continuous increase in both imports and exports be an index of prosperity, what has been done during the past few months may be taken as having been eminently prosperous, inasmuch as the official returns show a considerably larger business to have been transacted than in former years, and there seems no doubt that as great an increase will continue to be effected, as the satisfactory harvests which were ingathered during the autumn in some of our largest markets abroad cannot fail to leave their effects, and our political relations with other countries are of such a character as to give a fair promise of the continuance of profitable commercial intercourse; and, further than this, the development of the railway system throughout the whole of the civilised world, and the impetus given to iron shipbuilding, afford an assurance that there is no probability whatever of any prolonged dulness in any branch of the metal trade.

The late rise in the value of money may possibly tend to check rash speculation, but there is nothing to warrant the idea that it will exercise any deleterious influence upon legitimate business; in fact, it may in a measure stimulate bona fide trade in so far that the markets are less likely to be subject to violent fluctuations, and any rise which may take place will doubtless be supported more by regular business than by a general inflation through excessive speculation.

COPPER.—There has been a rather better market this week, and prices for Chili bars have shown a somewhat improving tendency. The market opened on Monday at 60l. 12s. 6d. to 60l. 17s. 6d., quotations remaining firm throughout Tuesday. Tuesday at these figures, while yesterday more disposition was manifested to buy, and 60l. 15s. to 61l. were officially quoted, the market closing to-day steadily at the best. The amount of business, however, which has been transacted has been rather limited, but the improved tone indicates that the prospects are viewed as satisfactory, but it would appear that some great impression will have to be made upon stocks ere any renewed and continuous activity occurs in the speculative demand. The only feature in this market worthy of consideration is the moderate range of prices now ruling, and this is a point which should not be overlooked by buyers, as it tends to stimulate the demand to a material extent, so that the market is easily maintained. Low prices especially tend to increase the demand for shipment, and as smelters are able to purchase the raw material at favourable prices, they are consequently placed in a position whereby they can offer their manufactured copper upon advantageous terms to shippers, who some little time back did not hesitate to avail themselves freely of the moderate prices, and if the demand for manufactured for shipment is now quiet it can hardly be taken as a sign that the wants of the foreign markets are diminishing, but it is to be attributed to the fact, that heavy quantities have already been shipped to India especially, and that it requires time for these supplies to be worked off before renewed buying takes place. Strong Indian sheets are cheaper, and have been sold as low as 60l. 3s., and yellow metal at 5 5/8d.

IRON.—This market has remained rather quiet, and with the exception of a few slight fluctuations in pigs prices have undergone no change, and it does not seem likely that any particular alteration will be effected for the remainder of the year, as for the greater part of the time most of the works throughout the country will be closed for the holidays. Shipping business continues rather inactive, and the approach of Christmas has caused quietude in the demand for home consumption. Nevertheless, makers are said to hold some large contracts, which will cause renewed activity at the mills when they re-start after the vacation, and it is fully ex-

pected that the orders which will be received early next year will be sufficiently large and numerous to give constant and regular employment to the several works in the producing districts. This week fresh orders have been very scarce, especially for manufactured, what little business has been carried through being confined chiefly to the raw material. Holders of warrants have kept firm in their quotations, and no attempt has been made by manufacturers to stimulate the demand by making concessions. Confidence in the stability of the market does not appear to have been in the least shaken by the quietude in the demand at the present time; in fact, considering we are passing through a period which is invariably the dulllest time of the whole year for trade, and as business now is fully up to the average of what it is usually at this season, it would be a matter of surprise if the market was depressed, especially as advices from America are most promising, and still give great reason to expect that the demand for that country will revive shortly, and also to a considerable extent.

The latest reports from New York show that steady sales of pigs are being made, and the demand continues well maintained, and prices show very little change from those last quoted. No. 1 Gartscherie and Glangarnock are quoted at 22 3/4 50, Coltness at 22 3/4 50, and Eglington 22 1/2 50. These figures show a fall of about 2s. upon Coltness, while the other brands show no alteration. For scrap iron and old rails there continues to be an active demand, and the turnover is said to be large, at previous prices—viz., 22 1/2 50 for scrap and 23 1/2 50 for old rails. The trade in Wales is said to be rather restricted, but not more so than is usual at this time of the year—in fact, some of the manufacturers hold a few good orders, and makers are reluctant to sell for forward delivery at current rates, as it is expected that the demand will further expand early next year. The improved position in the state of the trade at Sheffield is maintained, and a very fair business continues to be transacted in ship and boiler plates. Stocks are heavy, and are said to have somewhat increased, consequently no improvement is expected in prices yet awhile. At Wolverhampton quotations are said to be well sustained, and Wrexham cold blast pigs have advanced 10s. upon the price quoted a fortnight back, being firmly held at 90s. Hematites are strong at 72s. 6d., and all mine Staffordshire qualities are quoted at 65s., and good Derbyshire at 50s. There is a fair demand for manufactured, marked iron selling at 7l. 10s., and common bars at 5l. 15s. In plates a good business continues to be transacted, and prices keep firm. The Middlesbrough market is reported very quiet, and the amount of business doing is confined to narrow limits. No. 3 is quoted at 39s. 3d., and No. 4 at 38s. 3d., sellers, with buyers at 3d. per ton less. There is a very inanimate demand for warrants, which are quoted nominally at 40s. 6d. for No. 3. On Tuesday last the stock held by Messrs. Gannell and Co. had increased by 1741 tons, the quantity held on that day amounting to 122,277 tons. The deliveries are very fair, the chief being sent to Scotland, the quantity sent there last week being about 11,000 tons. The shipments for the first half of this month are said to be very heavy, but they are not expected to be so good during the latter half, as the holidays will form a great interruption to business. There is little or no change in the state of the manufactured trade. The demand for shipbuilding material keeps brisk, and manufacturers experience difficulty in delivering to contract time. There is not so much doing in bars, which are quoted at 52 1/2 6d. to 52 1/2 15s. Angles sell from 5l. 17s. 6d. to 6l., and ship-plates from 6l. 17s. 6d. to 7l. The Glasgow warrant market has been very steady this week, and the demand rather quiet. The opening price for mixed numbers on Monday was 51s. 6d., receding to 51s. 2d., while on Tuesday the market was dull, at 51s., but yesterday a somewhat better feeling prevailed, and the price improved to 51s. 3d., while to-day the market has been maintained at 51s. 3d. to 51s. 4 1/2 5d. cash.

TIN.—This week the tin market has been rather inanimate, and at the early part prices tended in buyers' favour, nevertheless the amount of business transacted was limited; the spirit of speculation which gave so much life to the market a week or two back having to a great extent subsided, and quietude instead of activity prevailed, but the market has since somewhat recovered. Cash parcels of foreign tin changed hands on Monday at 90l. 10s. to 90l., and on Tuesday at 90l. to 90l. 5s., while yesterday quotations improved to 90l. 5s. to 90l. 10s., closing to-day at 90l. 15s. to 91l. It seems that holders have no intention of submitting to any further material concession, and notwithstanding that the demand is dull at the present time, yet, according to the last statistics, the market appears in such a sound and satisfactory position, and the future prospects seem so very promising that most holders prefer to risk the future course of prices than to sell at present rates.

LEAD.—There is no new feature to be reported in the state of this market; the demand is slack, but prices keep steady at last week's quotations.

SPELTER.—Quotations remain nominally unaltered, and the demand keeps very restricted for both English and foreign.

STEEL.—A moderate business is being transacted, and prices are strong at 6l. 10s. for rails.

TIN PLATES remain dull of sale, but prices are upheld.

QUICKSILVER.—The price has given way without leading to any business.

Very little change has taken place in the **MINING SHARE MARKET** since our last, owing to the near approach of the Christmas holidays, and as our remarks close at four o'clock on Thursday afternoon there are a few official reports which have not yet been received, and consequently we are not able to refer to them this week.

Business has been very restricted, and prices for the most part nominal in all mines.

TIN in the metal market has been, on the whole, rather weaker this week, but we have not heard of any change in the standard for ore in Cornwall. Blue Hills, 3 1/2 to 4; Carn Brea, 9 1/2 to 10 1/2; Cook's Kitchen, 10 to 10 1/2; Dolcoath, 56 to 57; East Lovell, 4 to 4 1/2; East Pool, 35 to 37; New Wheal Pevor, 2 to 2 1/2; Polrose, 1 1/2 to 2; South Condurrow, 10 1/2 to 11 1/2. South Frances, owing to an improvement, have been firmer, and leave off at 11 1/2.

Tincroft, 1 1/2 to 2 1/2; West Basset, 15 to 16; West Frances, 10 to 11; West Pevor, 15 to 16; West Phoenix, 1 1/2 to 2 1/2; West Kitty, 1 1/2 to 2; Wheal Basset, 5 to 5 1/2; Wheal Grenville, 10 1/2 to 11; Wheal Agar, 6 to 6 1/2; Wheal Kitty (St. Agnes), 3 1/2 to 4 1/2; Wheal Jane, 4 1/2 to 1; Wheal Ury, 4 1/2 to 4 1/2. Wheal Pevor, 27 to 28, ex div.; at the meeting, held in Cornwall, a dividend of 1l. per share (3000l.) was declared for the quarter. The accounts show sales of tin, 141 tons, 7195l. 12s. 9d.; tin leavings, 571l. 1s.; a profit of 3020l., and a credit balance of 3683l. 2s. 9d. The labour costs are charged to Nov. 20, add 146l. 7s. 4d. on account of bills. The agents consider the prospects of the mine are still very good, and hope, as in the past, satisfactory returns will be the result of working in the future. Wheal Jewell, 4 1/2 to 5 1/2; Wheal Sisters, 2 1/2 to 2 1/2; North Busy, 2 1/2 to 2 1/2; North Penstruthal, 1 1/2 to 2 1/2. Wheal Coates, 30s. to 35s.; the improvement in the levels east and west is maintained: 6 tons of tin sold yesterday for 333l. 16s. 4d.

COPPER shares generally have been very quiet, with nominal prices. Bedford United, 1 to 1 1/2; Carnarvon Copper, 1/2 to 1. Devon Great Consols, 15 to 16; the 160 west is worth 4 tons of copper ore and 4 tons of mundie per fathom. The 205 west is worth 2 to 3 tons of copper and 4 to 5 tons of mundie. Devon Great United, 2 1/2 to 3; good progress is being made in forking the water out of the mine. East Caradon, 1 1/2 to 1 1/2; East Crebor, 15s. to 17s. 6d.; Gunnislake (Clitters), 3 1/2 to 4; Hingston Down, 25s. to 30s.; Mellanear, 4 1/2 to 5; Marke Valley, 1 1/2 to 1 1/2; Morfa Du, 17s. 6d. to 20s. 6d.; New West Caradon, 12s. 6d. to 15s.; Parys Copper, 20s. to 22s.; Prince of Wales, 17s. to 19s.; South Caradon, 60 to 62 1/2; West Caradon, 2 to 2 1/2; West Crebor, 6s. to 8s., and in demand; West Tolgus, 45 to 50; West Seton, 17 to 19. Gawton Copper, 20s. to 22s. 6d.; the directors here have made a call of 2s. per share. The 117 level east is worth 25l. per fathom. The new arsenic works are in active operation, Wheal Crebor, 4 1/2 to 4 1/2; the lode in the 108 east is increasing in size, and letting out more water. The agents expect a discovery here. The rise in this level in the south lode is worth 70l. per fm. Mona, 14 1/2 to 15 1/2; a telegram just received states that the 70 has been holed through, giving complete ventilation. This end is still in solid ore.

LEAD mines, like the rest, are quiet, and without any change in nominal quotations. Bwlch, 2 1/2 to 2 1/2; Derwent, 2 1/2 to 2 1/2; D'Eresby Mountain, 40 to 50; East Craven Moor, 1/2 to 1; East Van, 1 1/2 to 2; Glenroy, 10s. to 15s.; Gorsedd and Merilyn, 2 1/2 to 3; Great Laxey, 18 1/2 to 19 1/2; Herodsfoot, 15s. to 20s.; Leadhills, 2 1/2 to 3; North D'Eresby, 1 to 1 1/2; Crosswood, 1 to 1 1/2; Hartington, 1 to 1 1/2; Kirk Michael, 1 1/2 to 1 1/2; Pandora, 1/2 to 1/2; Roman Gravel, 9 1/2 to 9 1/2; Pen-yr-Orsedd, 1 to 1 1/2; Tankerville, 10s. to 15s.; Van, 16 to 17; West Chiverton, 1 1/2 to 1 1/2; West Holway, 1 1/2 to 2; West Lisburne, 1 to 1 1/2. Frongoch, 4 1/2 to 4 1/2; this mine has sampled 120 tons of lead for sale on the 27th, and 100 tons of blende on the 30th. On the 21st the sale of blende was 50 tons of blende, at 2l. 13s., and 100 tons at 3l. 6s. 3d. Grogwinion, 3 to 3 1/2; this mine has sampled 100 tons of lead for sale on the 29th. Red Rock, 1 1/2 to 2 1/2; West Wye Valley, 4 1/2 to 5; New Wye Valley, 1 to 1 1/2; Ystwith, 1 to 1 1/2.

SOUTH DARREN. 2 to 2 1/2; they have begun to drive the 120 levels. The 110 east is improved, and valued at 10 cwt., and the 110 west at 1 ton per fathom. Lode east of the winze at the 100 is worth 1 ton per fathom. East Roman Gravel, 17s. 6d. to 20s.; a winze is about to be sunk below the 86 in a lode worth 2 to 3 tons per fm. Stope, south of winze, worth 2 1/2 tons per fathom; and stope north 2 tons. The 80 end is worth 1 1/2 ton per fathom. The sampling for this month is 40 tons of lead and 20 tons of blende.

FOREIGN.—Almadén and Tinto, 3 to 4; Arendal, 2 1/2 to 3; Brazilian Gold, 1 1/2 to 1 1/2; Canadian Copper, 2 to 2 1/2; Cape Copper, 40 1/2 to 41 1/2; Colorado, 28 to 28 1/2; Copiapo, 11 1/2 to 12 1/2; Devalla-Moyar, 25 to

25 1/2; Don Pedro, 10s. to 15s.; Eberhardt and Aurora, 2 1/2 to 2 1/2; Flagstaff, 22s. 6d. to 27s. 6d.; Frontino and Bolivia, 5 to 5 1/2; Indian Glenrock, 1 1/2 to 1 1/2; Indian Phoenix, 1 1/2 to 1 1/2. Santa Barbara advices show a profit for the month of October of 528l. 1s. 7d. The gold produce was 4203 oits., valued at 1258l. 3s. 11d. New Quebrada, 5 1/2 to 5 1/2; Panulillo, 5 1/2 to 6; Richmond, 16 to 16 1/2; Ruby, 5 1/2 to 6 1/2; St. John Del Rey, 200 to 230; Pestarena, 7s. to 9s.; Port Phillip, 9s. to 11s.; South Indian, 1 1/2 to 2; Hornachos, 6 1/2 to 7 1/2. Placerville, 2 1/2 to 2 1/2; a telegram to hand this morning announces that in working this shaft a new vein 3 ft. wide and rich in gold had been intersected. Blue Tent, 1 1/2 to 2; the rains having set in the agent telegraphs that he has started washing again, and is assured of a good hydraulic season. Birdseye Creek, 1 1/2 to 2, cum div.; English-Australian, 15s. to 17s. 6d.; in 9 1/2 days they have crushed 330 tons of stone, yielding nearly 60 ozs. of gold, which is an improvement. The crushing was interfered with through having to make some alterations in the winding-engine, which were completed.

The Market for Mine Shares on the Stock Exchange, although somewhat unsettled at the beginning of the week in consequence of the approach of the Christmas holidays, continue to maintain an extremely satisfactory tone, and yesterday (Thursday) there was a general improvement in almost every class of security, mine shares so fully participating that the movement in price was almost without exception upwards. Such a state of affairs at such a season augurs well for a period of prosperity to open the coming year.

With regard to the Dynamite Monopoly an extraordinary statement was made at the Wheal Pevor meeting on Tuesday by one of the Dynamite Company's (Nobel's Explosives Company's) agents, which however should tell strongly in favour of the miners. He stated that he "had the authority of the manager for saying that the company had never paid a larger dividend than 5 per cent." The statement was received with roars of laughter; but assuming it to be accurate it demonstrates an important fact, that the purchase money paid by the company to the inventor was so high that those who supplied the actual cash paid, like Franklin, too much for their whistle. The further inference is that the inventor has already been exorbitantly paid, and that the application for the prolongation of the patent is to be made by third parties who seek to reimburse themselves for making a silly commercial bargain. It is needless to say that the Patent Laws were intended to encourage and protect inventors and not to compensate capitalists for making injudicious investments. The report of the meeting in London to oppose the prolongation, as well as further reference to the subject, will be found in other columns.

In Indian Gold Mine Shares there has been a large amount of business done, although the holidays have naturally had a disturbing influence, dealers thinking more of the holidays than of Indian matters; price, however, are on the whole rather higher.

The Devala Central Gold Mines Company, under the advice of Mr. Sopwith, C.E., the well-known mining engineer, have engaged Mr. Seymour, who has had a long experience in mining in connection with Mr. Sopwith, to proceed to Devala for the purpose of making a further and detailed examination of the mines on the company's property with the view of laying out the work and organising the operations generally. Mr. Seymour left England for India on Dec. 17.

The Silver Peak Mining Company's letters of allotment and regret were posted this week; it is stated that the applications were largely in excess of the number of shares to be allotted.

Devon Great Consols shares have remained in good demand and scarce at about 16l. 17s., the bottom levels continuing to look well. The month's sale of copper ores, 902 tons, yesterday (Thursday), realised 1757l. 3s. 6d.

Devon Great United shares advanced to about 2 1/2 to 2 1/2, with many buyers, owing no doubt to the highly satisfactory and rapid progress being made in pumping the water out from the bottom of the mines, and the early expectation of commencing operations in obtaining copper ore and mundie, and of making good discoveries of ores both in the deep and shallow levels on the rich Devon Great Consols lodes. East Long Rake, 1 to 1 1/2; a good business is reported in these shares, and it is believed that they will soon command a better price if the mine continues to open up as it is doing.

Mona, 14 1/2 to 15 1/2; from a telegram received this morning it appears that the 70 has now been holed, thus giving complete and ample ventilation. The new engine is working very satisfactorily, and the mine looking splendid, the 70 end being still in solid ore.

Roman Gravel shares 9 1/2 to 10, ex dividend of 5s. per share; the levels driving south (in the direction of Bog and Pennerley Mines) continue, as they have done for years, to look well, laying open good reserves of lead ore. These mines have now returned to the shareholders about 100,000l. in dividends.

South Wheal Frances shares have been in good demand at advancing prices, 11 to 12, owing, no doubt to improvements in the mines, as was stated by the agents in their report published last week in our columns.

Panulillo, 5 1/2 to 6; the fact of the company having entered the Dividend List has caused a large amount of extra attention to be directed to the property, which has for some time past been improving, and now presents most encouraging prospects.

Mysore Reefs shares, 1/2 to 1/2, and are likely to have a great rise, as it is rumoured that a large offer is likely to be made for a portion of this company's property. It is also rumoured that one individual of great Indian connection subscribed for and paid on shares to a very great extent, and who knows the property well.

Hornachos shares are reported to have changed hands this week at 7 1/2 upwards per share, and it is thought that they are likely to rise in price, owing to improved prospects in driving of several of the deeper levels in rich silver-lead ore ground.

Kapanga, 3 to 4; an interesting and detailed report on this property will be found in another column. There would appear to be ample reasons for the company steadily pushing on the work now in hand so as to reach the lode in deeper levels and open up on what has so far proved a valuable lode.

Richmond, 15 1/2 to 16 1/2; the usual telegram from the mines at Eureka, Nevada, states that the week's run was \$55,000 from 900 tons of ore. During the week the refinery produced doré bars to the value of \$50,009. The manager (Dec. 1) reports that the 800 west drift has been drifted 8 ft. in hard ground. The 800 north-west cross-cut has been extended 15 ft. on the fissure; the ground is looking more favourable for ore than it has for some time. The 900 west drift has been drifted 11 ft.; the ground more favourable for drifting. The 900 north-west has been advanced 11 ft.; the ground in the present end looks more favourable for ore than it has for some time. The 900 winze is now down to a depth of 40 ft.; in the present end the fissure is well defined, with from 8 to 10 in. of ledge in place, and looks very favourable for ore. The chambers are all looking very well, and turning out the usual quantity of fair grade ore.

Ruby and Dunderberg, 6 1/2 to 6 1/2; the weekly telegram confirms the statement made by the chairman at the general meeting that satisfactory returns from the furnace might very soon be expected. Nothing, it is remarked, can be more satisfactory than a run of \$15,000 in less than a fortnight from one furnace, and the result shows an average yield of 848 per ton of ore. Snow has again prevented the customary shipments of ore from the mines, but latest advices report that the quantity of ore ready to be sent down when the roads were again passable was fully up to the average, if it did not exceed it. Next year the railway will, no doubt, be taken up to the mine, and this company will then be independent of the snow as its neighbours the Richmond and the Eureka Consolidated are. Roads become good shortly after the first snowfall, when the ore can be conveyed down as usual.

Missouri, 10 1/2 to 11; advices received this week, Dated Dec. 1, state that in St. Clair Mine the 315 level north has been driven 27 ft. The lode has increased in value and improved in every respect, and is worth in ore 2 1/2 tons per fathom. Two stopes have been started in the 315 north level, one from the rise, and the other 40 ft. back from present end of level. The lode in these portions of the level is worth 1 1/2 ton to the fathom. The 315 south rise has been driven through into a clay opening. The water from the winze has broken through, thereby unwatering the winze. The rise will be at once squared up, and stoping will then be commenced; and as the ore ground in the winze averaged 2 1/2 tons to the fathom, we shall have, from all present indications, a splendid run of galena in this portion of the mine, extending for many fathoms. In the 245 fm. level 15 fms. of ground have been stoped 5 fms., producing 2 tons per fathom, and 10 fms. 1 1/2 ton per fathom. The stope and levels in St. Clair shaft present a very satisfactory appearance for a handsome output in December. Old Engine shaft is unwatered to a depth of 250 ft., and retimbered and completed to a depth of 235 ft. We have not yet reached any level below the 175. Dressing machinery is nearly completed, but the setting of it has been delayed by the severity of the weather.

Placerville, 2 1/2 to 2 1/2; a telegram to hand on Thursday announces that in making the shaft a new vein has been intersected 3 ft. wide

and rich in gold. This is a most important discovery, as the lode is no doubt whole to surface. Blue Tent, 13 to 24; the agent telegraphs that copious rains have set in, assuring a good hydraulic season, and that he has recommenced washing. At Ringold the mill has been started, and is now in full work.

Lead Mine shares have been scarcely so freely dealt in as other securities, but there has nevertheless been a large amount of business done, and the prospects are considered encouraging.

Tankerville Great Consols, 1/2 to 3/4 prem.; as will be seen by the manager's report in another column a further and most important discovery of lead ore has been made at the 92, where the lode is worth 4 to 5 tons of lead ore, or 40% to 50% per fathom, and this discovery may lead to important results by cross-cutting at shallower and deeper levels to intersect this rich bunch of ore ground.

Leadhills, 2 1/2 to 3; the shares have been in better demand, and appear scarcer to purchase since the appearance of the manager's monthly report published in our columns last week. Shareholders who may visit the property will readily see the enormous amount of work which has been accomplished both underground and at surface, all of which is for the future good of the company.

Great Laxey, 18 1/2 to 19, and shares very firm, the mines improving at several points, and the quarterly dividend being due next month. The new boring machinery is giving great satisfaction.

Bwlch United, 2 1/2 to 2 3/4; the drive on the slide is pointing more easterly, and the lode is evidently reforming a few fathoms ahead. Stones and strings of ore are coming in, and it is worthy of note that a parallel slide in Cwm Eryn Mine adjoining to the north led to a very important discovery. The manager has great expectations on this point.

West Lisburne, 1 to 1 1/4; the new and powerful engine is being rapidly brought into position with its attendant dressing machinery, as the mine was left in a state of production. No time is being lost to get the surface arrangements completed for early returns of ore.

Frongoch, 4 to 5; they have sampled 120 tons of lead for sale on Dec. 27, and 100 tons of blende for sale on Dec. 30, and sold on Dec. 21 50 tons of blende at 2 1/2, 13s., and 100 tons of blende at 3 1/2, 6s. 3d.

Grogwinion, 3 to 3 1/2; they have sampled 100 tons of lead for sale on the 29th instant.

[The closing quotations being given in the Share List on the last page of the Journal it is unnecessary to repeat them here.]

At Truro Ticketing, on Thursday, 2302 tons of ore of 6 1/2 average produce, and containing 142 tons 4 cwt. of fine copper, were sold for 7435 1/2. 2s. 6d., being 3 1/2 4s. 6d. per ton of ore; 10s. 5 1/2 d. per unit, or 52 1/2 6s. per ton of fine copper in the ore, and an average standard of 96 1/2 16s. Subjoined are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper
Dec. 2.	876	91 1/2	7 1/2	4 1/2	10s. 11 1/2 d.	254 14 0
23.	2302	96 16 0	6 1/2	3 4 6	10 5 1/2	52 6 0

Compared with the last sale the decline has been in the standard 1 1/2 5s., and in the price per ton of ore about 1s. 6d.

GAS SHARES.—The principal business in these shares, according to this evening's report of Mr. W. L. WEBB, of the Stock Exchange and Finance, has been in Bahia, 15 1/2; Bombay, 5 1/2; British, 33 to 33 1/2; Continental, 190; European, 19 1/2; Gaslight, A, 179 to 181; ditto, C, 219; ditto, D, 217 to 219; ditto, E, 219 to 219 1/2; ditto, H, 7 per cent. max., 136 to 137 1/2; ditto, 4 per cent. debentures, 103 1/2; Imperial Continental, 187 to 190 1/2; Monte Video, 17 to 17 1/2; Oriental, 7 1/2; ditto, new, 5 1/2; South Metropolitan, B, 179 to 182 1/2; Imperial Gas firm, others without change. For closing prices see list on last page of Journal.

INSURANCE SHARES have, according to this evening's report of Mr. W. L. WEBB, of the Stock Exchange and Finance, been dealt in as follows:—Commercial Union, 25 1/2 to 25 3/4; Fire, 37 1/2 to 38; Law, 122; London and Provincial, 5 1/2 to 5 3/4; Ocean, 7 1/2; Railway Passengers, 7 1/2 to 8 1/2; Rock, 8 1/2 to 8 3/4; Royal Exchange, 408 to 412. Insurances little doing. For closing prices see list on last page of Journal.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. W. ANSTON, of Tokenhouse-yard, are given in tabular form in the last page of the Journal.

The directors of the Colonial Bank have resolved to declare at the meeting in January a dividend of 7 per cent. for the half-year ended June last.

The transfer books of the Aruba Island Gold Mining Company were closed on Dec. 20, and will remain so to Dec. 30.

DYNAMITE QUESTION.—We understand that an important and influential meeting of mineowners is about to be held at Whitehaven on this subject.

GREAT DISCOVERY IN THE DYLIFFE MINES.—A correspondent writes:—I was glad to see the report in last week's Journal, which announced in few words that they had cut into a solid rib of lead ore 6 in. wide, which on further driving had opened out to a run of solid ore 12 in. in width. I am anxiously looking for your current number to see further news. The sett extends for a couple of miles, and it has not been a quarter worked. The company are already working on three other lodes entirely distinct from this new lode, and the discovery just made will give to the fortunate shareholders an entirely new mine. I hear from the local agent, Capt. Dean, that it has caused intense excitement in the neighbourhood, as it is better than anything ever seen there, and I presume the directors will now issue the reserve shares so as to raise a fund for working the new lode in an efficient manner.

EAST ROMAN GRAVELS.—The 86 end is worth 1 1/2 ton of lead per fathom. No. 1 stop in this level 2 1/2 tons, and No. 2 2 tons. They are about to sink a winze below this level valued at 2 to 3 tons per fathom. They sample 40 tons of lead and 20 tons of blende for the month.

BRITISH SILVER-LEAD.—Several hundred yards on the Great Newborough lode is proved rich in ore, and it is anticipated that the cross-cut 300 yards further east and much deeper will prove the lode even richer. The parallel or north lode, the great north and south lode, and the numerous branches are all in virgin ground.

PANT-Y-MWYN.—The run of ore lately discovered west of Griffith's shaft still continues, and augurs well for the deeper levels now driving west of Modlyn shaft, which is close to the first of a series of rich runs discovered in the levels above.

WHEAL UNY.—At the meeting held on Thursday favourable reports were presented. The manager believes that during the coming quarter the mine will meet costs: 10% were promised towards resisting a renewal of the dynamite patent right.

CARN BREA.—The four-monthly meeting was held on Thursday (Capt. Teague in the chair). The financial statement showed a profit on the 16 weeks' working of 3951 1/2, thus reducing the adverse balance to 2000 1/2. The tin sold amounted to 341 tons, and the aggregate value of the points being worked was 484 1/2 per fathom, and at the next meeting it is believed a credit balance will be shown.

BEDFORD UNITED.—The sinking of the shaft on the Bridge Lode is progressing satisfactorily, and some fine specimens of grey and black ore are being brought to surface. A box of the ore has been sent to the office of the company for the inspection of shareholders, and has been pronounced to be indicative of a good lode before long.

NORTH TRESKERBY.—Capt. Richard Pryor, of Redruth, the former manager of North Trekerby Mine, has just purchased the lease thereof, and all the machinery and effects thereon, for a sum not exceeding 3000 1/2, but somewhat under that amount. The machinery consists of an 80-inch pumping-engine, another pumping-engine of about 50 inches, and a winding-engine. North Trekerby was not stopped for poverty, but because the engine, which was situated in the western part of the sett, was not sufficient to keep out the water from the bottom level, which is rich in copper ore. The 80-inch engine, on the eastern or central part of the sett, is on a shaft which will take the lode about 50 fms. deeper. It is said to be Capt. Pryor's intention to attach a flat rod to that engine, and drain Tresider's shaft. Rich masses of ore are said to be now under water. There are numerous tin lodes in the sett, which it is hoped will pay well for development.

PERRAN SILVER-LEAD CONSOLS.—This company has been formed to acquire and work Penhale United and Phoenix properties, Perranzabuloe. These extensive sets contain some of the richest silver-lead lodes in the county. Capt. Richard Pryor is the promoter and manager.

TREVINCE CONSOLS.—Some of the largest shareholders, accompanied by several well-known mining agents, inspected the mine last week and expressed their pleasure and even astonishment at the extraordinary discovery now made. We understand that a large and

valuable piece of ground has been added to the sett, thus enhancing the value of the property most materially. We see from the report that 40 tons of copper ore have been sampled this week from the lode discovered at only 8 fms. from surface.

WHEAL CREBOR.—The coming year will in all probability see this mine taking the lead of all the mineral properties in the Tavistock district, as the returns, which are gradually increasing, are likely to be considerably augmented by the addition of the ground now being laid open in the rise going up in the back of the 108 east. This point of operation is a very important feature, and as soon as a communication can be effected with a level above a valuable piece of ground will be available for stoping.

ENGLISH-AUSTRALIAN.—The directors have received advices from Mr. Pollard, dated Fryerstown, Nov. 11, in which he reports few changes of importance since last report. He had crushed 330 tons for 9 1/2 days' crushing, with a result of 59 ozs. 13 dwts. retorted gold, an average yield of—say, 3 1/2 dwts. per ton, and next month he expects to show an improvement. The crushing had been retarded by some alterations necessary in the winding engine, which at the date of writing had been made, and the engine was working well.

BENHAR COAL.—The resolutions of the shareholders' committee, one of which proposes a voluntary form of liquidation, and the other a judicial form under the supervision of the Court, have been under consideration of the directors, and after some verbal amendments bringing the resolutions into legal shape, they gave them their assent.

THE MINERAL RESOURCES OF COLORADO.—The monthly circular of the Citizens' Mining Investment Company of Leadville, Colorado, states that the ore and bullion products for 1879 was:—Lbs. of bullion, 37,727,797; ozs. of silver, 6931,408; value of silver, \$7,743,116 81; ozs. of gold, 818 8; value of gold, \$16,376 37; value of lead, \$1,496,437 64; total value of bullion produced, \$9,250,928 85. High grade ore was shipped to foreign reduction works, \$2,751,879 76; gold yield from placer mines, \$30,000 00; total productions, \$12,032,808 61. And for the first three months of 1880:—Lbs. of bullion, 14,686,558; ozs. of silver, 2,342,360; value of silver, \$2,650,044 16; ozs. of gold, 569 11; value of gold, \$11,436 00; value of lead, \$581,788 06; total for three months, \$3,722,997 81. Total production first half of 1880, \$7,813,866 00; July, \$1,054,439 00; August, \$1,296,352 00; September, \$1,502,968 83; October, \$1,287,984 00; total production first ten months of 1880, \$12,955,609 93. When comparisons are made of above totals for 1879, and only ten months of 1880, and it is remembered that, on account of the protracted strike of the miners at Leadville, all of the heavy-producing mines were shut down a part of the summer it will be seen that the present condition of affairs in Leadville is most favourable: 13 smelters, with 35 furnaces, are running to their full capacity, and to guard against the recurrence of a strike they have in their bins and yards thousands of tons of ore not included in the above statistics.

THE DYNAMITE MONOPOLY.

ATTEMPTED PROLONGATION OF PATENTS.

AT A MEETING of PERSONS connected with the WORKING of BRITISH and FOREIGN MINES, held at the offices of Mr. PETER WATSON, 18, Austin Friars, Old Broad-street, on Wednesday last, for the purpose of OPPOSING the APPLICATION about to be made by the DYNAMITE COMPANY for an EXTENSION OF TIME for the EXPIRATION OF THEIR PATENT,—

Mr. PETER WATSON in the chair,

The following Resolutions were unanimously passed:—

"That this meeting pledges itself to do their best to procure the funds necessary to employ Counsel to oppose Messrs. Nobel's application to the Privy Council for an extension of the term of their Patent."

"That Mr. PETER WATSON, Mr. DARLINGTON, and Mr. WADDINGTON be appointed a Committee to take all necessary steps to carry out the object expressed in the last Resolution."

"That it be an instruction to the Committee, if they deem it desirable, to place themselves in communication with the Mining Institute of Cornwall, and any other parties who may desire to oppose an extension of Messrs. Nobel's Patent, with a view to act with them in furthering such opposition."

The Committee of "The Dynamite Fund," consisting of Messrs. PETER WATSON, JOHN DARLINGTON, and HARTLEY WADDINGTON, will be glad to RECEIVE SUBSCRIPTIONS from Mining Companies, Managers, and Shareholders interested in British and Foreign Mines.

Letters, with remittances, to be addressed to Mr. PETER WATSON, No. 18, Austin Friars, Old Broad-street, E.C., or subscriptions to be paid direct into the account of "The Dynamite Fund," with the Alliance Bank, London, E.C.

NEW AND IMPORTANT COLLIERY INSTRUMENT.—It is stated that Mr. Alan Bagot, M.P., who is already known as a useful contributor to mining literature, has now designed an instrument which promises to be of great advantage in connection with the safe working of collieries; it is to measure the exhaust produced by a vacuum fan in ounces per square inch. The apparatus consists of one of his patent barometers with a double contact arrangement. The contact pin is adjusted to the ordinary atmospheric pressure, the other to a point slightly below the exhaustive effect of the vacuum fan when the depression is equal to 1 1/2 in. of water gauge. The electrical contact apparatus is worked by a Leclanche's battery of six cells. The effect of the apparatus is that if the air in the mine finds a short cut into the returns, electrical warning is given on one indicator; on the other hand, if the friction of the air or "drag" is increased to a dangerous point, the engine-driver's attention is electrically called to it on the other indicator. The apparatus is now being erected at Harris's Navigation Collieries, the deepest mines in South Wales; and the preliminary experiments have satisfied the engineers of the great value of the invention. The readings given by the gauge indicate the actual pressure per square inch that exists in the up-cast shaft; this subtracted from the atmospheric pressure checks the water-gauge reading, but one of the chief features of the apparatus is that it works out its own calculations.

TECHNICAL COLLEGE FOR DUNDEE—MUNICIPAL OFFER.—At the meeting of High School directors, on Wednesday, Dr. J. B. Baxter, the Procurator Fiscal, in the course of some interesting remarks, said that he could not see why they should not have a collegiate town. There was a movement some years ago to carry into effect that great and beneficent purpose, and he would have expected that it would have borne good fruit if that dark cloud of commercial depression had not settled upon the town.

If the movement shall be resumed and prosecuted, or a new movement made, and if a satisfactory constitution for a college, to be located in Dundee, and to embrace Arts and Science classes—a college similar, or nearly similar, to the Owen's College, Manchester—can be obtained, he was now in a position, with the munificent assistance which has been rendered to him, to place at the head of a subscription for the institution of such a college a sum of 125,000 1/2, to be paid by three or four instalments as necessity shall require, or as shall be called for by any superintending committee. Dr. Baxter was sure they could not confer a greater boon upon Dundee than to carry out such a scheme as that; and that is the half of the sum necessary—250,000 1/2—and he hopes that now that the foundation has been laid their enterprising citizens will not be tardy in coming forward with the other half. The members generally expressed their great gratification at hearing Dr. Baxter's munificent offer, and the hope was expressed that the provost and magistrates would take up the subject and call a public meeting, in order that steps might be taken to carry on the movement to a successful issue.

THE PATENT OFFICE.—It is announced that an open competition for six situations as index and abridging clerks in the Patent Office will be held in London on Tuesday, Jan. 25, and following days. A preliminary examination will be held in London, Edinburgh, and Dublin on Friday, Jan. 14. Candidates must give notice to the Secretary, Civil Service Commission, on or before Jan. 4, in their own handwriting. The salary of indexing and abridging clerks in

the Patent Office commences at 250 1/2, and rises by triennial increments of 37 1/2 10s. to 400 1/2.

CAPPER PASS AND SON, BRISTOL,

ARE BUYERS OF

LEAD ASHES SULPHATE OF LEAD, LEAD SLAGS, ANTIMONIAL LEAD, COPPER MATTE, TIN ASHES, &c and DROSS or ORES containing COPPER, LEAD, AND ANTIMONY.

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MESSRS.

TO CAPITALISTS AND INVESTORS.

KENDALL

AND CO.,

PRACTICAL AND CONSULTING MINING ENGINEERS,

WEST OF ENGLAND MINING EXCHANGE, ST. AUSTELL, CORNWALL.

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KENDALL AND CO.'S Special Circular should be read by all investors with thoughtful care.

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Deals in all descriptions of STOCKS and SHARES at close market prices, and is always in a position to do business in SANTA BARBARA, PITANGUI, and BRAZILIAN GOLD MINES.

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60 East Buller.	100 Lady Ashburton.	10 Wheel Kitty.
50 East Caradon.	20 Mount Carbis.	100 Wheel Jewell.
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SPECIAL BUSINESS in Frongoch, Van, Grogwinion, Wheal Coates, New Wye Valley, Ystwith, Pevor, Blue Hills, New Kitty, Gawton, and Glenroy.

FOR SALE, the WHOLE or PART below quoted prices:—

50 Bwlch United.	50 Hornachos.	50 South Devon United.
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50 Devon Great United.	50 Lead Era.	10 West Lisburne.
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THE GOLD MINES OF INDIA. Mistaken investors before losing their money had better read the article on gold in "SOW AND REAP." Published by THOMPSON and SON, Old Town-street, Plymouth.

THE COAL FIELDS OF GREAT BRITAIN:

THEIR HISTORY, STRUCTURE, AND RESOURCES; WITH DESCRIPTIONS OF THE COAL FIELDS OF OUR INDIAN AND COLONIAL EMPIRE, AND OF OTHER PARTS OF THE WORLD.

By EDWARD HULL, M.A., F.R.S.,

Director of the Geological Survey of Ireland; Author of "The Physical Geology and Geography of Ireland."

Fourth Edition, demy 8vo, with Map and Illustrations; cloth, 16s.

"This edition has been largely re-written. It contains an entirely new chapter on Carboniferous Plants, kindly drawn up by Professor Williamson, F.R.S., of Manchester. The classification of the Carboniferous Series of Beds has been modified in accordance with the views enunciated in my paper on this subject, read before the Geological Society of London in 1877. The account of the various coal fields has been modified in accordance with more recent investigations as far as my information extends, and the statistical portions have been brought down to the date of 1878."—Extract from Preface.

London: EDWARD STANFORD, 55, Charing Cross, S.W.

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RICO SILVER MINING COMPANY OF COLORADO (LIMITED LIABILITY), CHICAGO, U.S., carefully managed at small expense. Profits of 100 per cent. per annum are expected, much more may be realised. The property of the company is at Rico, on the Rio Dolores, in South-Western Colorado—a district containing the richest and most easily worked Silver and Gold Mines in the world. The company offer working capital shares, fully paid, on extremely favourable terms to the investor. For prospectus and information, write to J. J. WEST, 245, Wabash Avenue, Chicago, U.S.

MONEY AND MINING.

IT IS WELL TO LOOK BEFORE YOU LEAP. Anyone who thinks of putting money into Mining can, by writing to me, have sent, post free to his address, a CIRCULAR, which will give him valuable information, Points of Financial Utility, and Practical Views regarding Mining Investments generally, considered from a business standpoint. J. J. WEST, 245, WABASH AVENUE, CHICAGO, U.S.

Extracts from J. J. WEST'S Circular on Mining Investments:—

With an occasional exception, such as the Richmond Consolidated, which pays dividends of from 40 to 50 per cent. per annum, English capital invested in America has not paid.

Excessive capitalisation, mines stocked for millions of dollars, or hundreds of thousands of pounds, want of due oversight and proper economy in working and managerial expenses, incompetent or dishonest management have, by far, more often caused loss of money to English and American investors than a failure or lack of richness in the mines.

In Colorado, new order of things as regards mining is coming into vogue: business men are conducting mining operations on business principles, making money out of the ores extracted from the earth. Railroads are penetrating into the heart of hitherto inaccessible districts rich in mineral wealth.

Let English investors try this new order of things; let them try placing their money in the richest known mineral district in the world, a little in advance of the railroad, while property is still cheap.

The Rico Silver Mining Company offers them the opportunity of sharing in the great profits to be made, by purchasing silver and gold mines from actual prospectors and locators, and judiciously and economically developing and working the mines so purchased.

Notices to Correspondents.

TANING—"W. J. A. D." (Glasgow).—The address of the firm interested in the Improved process described in the *Mining Journal* of Dec. 11 is—Marylebone-road, London.

CORRESPONDENCE.—All business letters should be addressed to "The Editor," and not to individuals. Private letters, except for the Proprietors, should not be sent to the office at all, as it must be distinctly understood that all letters received are, however they may be addressed, regarded as connected with the business, and opened accordingly.

WEST MARY ANN.—Permit me to say that this mine is at present in 3000 shares on the Cost Book Principle, and not in 5000 on the Limited Liability Principle. The arrangement, therefore, proposed some months ago having been dropped, and it is to be hoped the latest improvements on the property will benefit the smaller number of shareholders.—ADVENTURER.

QUARTZ OPERATORS' HANDBOOK—"J. G. G." (Aberystwith).—The work of which Mr. P. W. Russell is the author is published by Mr. D. Van Nostrand, Murray street, New York. The revised and enlarged edition could be obtained by ordering through Messrs. Tribner, Ludgate Hill, London, if they have none in stock.

BLACK AUTOGRAPH—"J. C." (Redruth).—The original is written with a very free-writing ink, and the transfer is made to obtain the negative precisely as with the chromograph, which you appear to use very well. Almost the only difference is that the negative is rolled each time with special printing ink. The copies—of which many hundreds can be readily taken—can scarcely be distinguished when the work is carefully done from an original produced with good black writing ink.

CAMBRIAN—"J. S." (Thetford).—If you cannot obtain the price quoted apply to the Secretary, who will at once inform you who are purchasing it.

EAST WHEAL ELLEN.—In June last this mine was advertised in the *Mining Journal*, and shares were to be applied for to Mr. Chas. Bawden, Poldice House, St. Day, Scornor, Cornwall, or the Cornish Bank. I accordingly applied to Mr. C. Bawden with the amount due for application, and received his receipt, since which I can get no reply to my letters of enquiry, have had no advice of any meeting, and even my solicitor can get no answer. Will the Cornish Bank or some correspondent of the *Mining Journal* state whether the mine is in operation, or how the subscriptions have been disposed of.—J. C. C. Widnes.

NOUVEAU MONDE.—If your correspondent "Shareholder," in last week's *Mining Journal*, had pursued his enquiries a little further he might have learnt that Mr. Oxlard is no longer in the service of the Nouveau Monde Company, but on his way out to take over the management of the renowned Callao Mine.—A LOVER OF TRUTH.

HAMBURG LOTTERY—"M. R." (Gley).—The issue of the tickets in this country is altogether illegal. The circulars have been sent broadcast by Messrs. V. and Co., of Colonnaden, against whom there is no remedy in the English Courts, but all who send money will almost inevitably lose it. The general mode of dealing in all these lotteries is to sell a capital of 15-20 guineas for 10-12 guineas, he will find after the drawing that perhaps one (more frequently none) of the numbers has won a prize of a few marks, which are seldom, if ever, remitted (less the 10 per cent. agents' commission) to the winner, but instead thereof he is sent some more tickets in a new lottery with a demand for the balance. The agent has always a profit; the player never. Those who do not accept the caution deserve to lose.

OLDEST SCIENTIFIC SOCIETY—"T. H." (St. Andrews).—The oldest scientific society in existence is declared by Mr. De Laveleye, of Brussels, to be the Academy of the Lyncei, which was founded at the beginning of the 17th century by four young men, who took as their symbol the lynx—an animal then to be found in the Apennines—with the motto, *Sigillum*. The members were to penetrate into the interior of things in order to know the causes and operations of nature, as it is said the lynx does, which sees not only what is outside, but what is hidden within. Their dream was nothing less than the organisation of modern science based on the method of observation—the church of knowledge. The academy was to have in the four quarters of the globe dwellings with sufficient endowments to maintain the members who might live there in common. These dwellings were to be provided with libraries, laboratories, museums, printing presses, and botanical gardens—in a word, with everything necessary for study. Their observations were to be communicated by writing to all the members. They were to renounce marriage as a *mollis et offensiva* requies, and injurious to study; nevertheless, monks were not admitted. The academy was reorganised in 1875, and at the present time members of various nationalities, including men of the highest scientific reputation in the countries to which they belong.

REMOVING FIRE-DAMP BY BORE-HOLES.—It has been stated that bore-holes from the surface have been tried in Belgium for the purpose of freeing the coal mines from gas. Can any of your correspondents give particulars about this, the result, &c.—M. E.

CRUSHING MACHINERY.—I should be glad to know if there are any data by which the performances of machines of the disintegrator class can be compared with those of the Cornish crusher. One of the greatest boons to mining would be a machine capable of reducing the material to fragments of a uniform size without over-pulverising the softest particles of the ore, which are generally the richest. I am practically acquainted with crushing ores, and have some ideas on the subject, but would like to profit by the experience of any of your practical correspondents.—W. M.

LIABILITY OF ADVENTURERS IN COST-BOOK MINES.—A Cost-Book mining company has this month issued the following notice of resolution, to be confirmed at the forthcoming meeting of its shareholders:—"That all shares in arrears of call or calls (or any portion thereof) made prior to Oct. 19, 1880, be now, and they are hereby, forfeited, but subject to restoration if the amount due be paid on or before Dec. 21, 1880." At foot of the circular is the following addendum:—"32 and 33 Vict., ch. 19, sec. 20: Any shareholder whose share has been forfeited shall, nevertheless, be liable to pay all calls, interest, and expenses payable on or in respect of the same at the time of forfeiture." In a recent number of the *Mining Journal* a correspondent, expatiating upon the advantages of the Cost-Book System, pointed out that a shareholder could at any moment cancel his liability by giving up or forfeiting his shares. Query: Is this irrespective of all liability in regard to unpaid calls upon the shares held by him; or, can the company legally claim and recover arrears of calls made antecedent to the surrender of the shares? Light upon the point will oblige.—IGNOTUS. [The Cost-Book System is not a distinctly limited liability system. Adventurers can relinquish their shares at discretion, but the relinquishing adventurer must pay his proportion of all outstanding liabilities. Shares forfeited are in the same position as relinquished shares in this respect.]

Received.—"P. W." a letter sent to the address given has been returned marked "Not known."—"G. B." (Liverpool). The chromogram is illegible.—"J. E. D." the matter is noticed as desired; the other request cannot be complied with.—"J. J. W." (Chicago). The address asked for is D. C. Davies Gbwen, Oswestry, Wales.—"H. C. B." Must send his name.—"H. N. and Co." (Liverpool). Either the matter is a month stale or there is an error in the date

in the first line. Kindly correct and it shall be attended to.—"R. S." (Truro). Too late: will receive attention next week.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, DECEMBER 25, 1880.

THE EMPLOYERS' LIABILITY ACT, 1880—IMPORTANT OPINION OF COUNSEL.

The above Act, which comes into operation a week hence, it is now seen, is not likely to affect mineowners and other large employers of labour to the extent that it was at first expected to do. It appears that there are several ways in which masters can so arrange as to lessen their responsibility and place some of it where it should in strict justice rest. The Attorney-General has laid it down that a contractor under an employer, or a stall-man in a mine, are the parties who are liable for any injury that may be inflicted upon the persons they employ. But to make certain of the power of the employer, a short time since a committee of mineowners was appointed to draw up a series of questions bearing on the provisions of the Act, and place them before counsel for their opinion. This was done, and the questions put into the hands of Sir F. HERSHELL and Mr. HORACE SMITH, Q.C. The first question to which the attention of the learned counsel was called was whether the parties interested could contract themselves out of the Act, to which the reply was, "We are of opinion that parties interested can contract themselves out of the Act, there being nothing in the statute to prevent the making of such a contract. The Act by section 1 gives a right of action; but this right of action, like other rights of action, may be parted with for good consideration. Thus it was held that a railway passenger may contract to be taken at his own risk—that is, he may abandon his right to sue for negligence (MACAULEY v. Furness Railway Company, 42 L. J., Q. B. 4, L. R., 8 Q. B., 57)." This important point, on which considerable doubt rested, may now be considered as settled after the very emphatic opinion given by the two learned counsel with respect to it.

The second question put was—Whether in case of injury in or about a mine or the surface works connected therewith, the legal representatives of the workman and any person entitled in case of death, can, by the contract of the workman, be excluded from other rights under the Employers' Liability Act, 1880, and under Lord Campbell's Act, and the general law. As the point is a most important one, the opinion given is both elaborate and clear. The learned counsel say, "It follows if the party may make a contract to abandon his right, his executors, as such, are bound by such contract as they would be by any other contract made by him. The persons, however, entitled to sue under Lord Campbell's Act, do not sue as executors, although the action is brought in the name of the executor (LEGGATT v. Great Northern Railway Company, L. R. 1 Q. B. Div. 599); and if the relatives had a wholly independent right of action arising from the fact of the death, the party in his lifetime could not dispose of such right of action as against such relatives, and if he attempted to do so, however, the contract might bind his executors as such it could not bind him as representing the relatives. But in fact the relatives have no right of action arising from the fact of the death, but only such right as the deceased had at the time of his death, which, in a sense, is preserved to them by Lord Campbell's Act. Though their claims under it may be different, they take it subject to the same bars to its maintenance as existed in the case of deceased. So that if by settlement of his claims (see READ v. Great Eastern Railway Company, L. R. 3 Q. B. 555; 37 L. J. Q. B. 278), or by any other agreement as by undertaking all risk (MACAULEY v. Furness Railway Company, supra), he has lost his right; his relatives we think would have no remedy. If, therefore, a workman makes a contract not to sue under the Employers' Liability Act, he is barred by the contract during his life; his executors after his death are barred by the contract from suing for the loss of wages, &c., between the injury and the death; and the executors, as representing the relatives, cannot recover after the death, because the deceased was not entitled to bring an action, having abandoned his right."

As to the amount to be paid, when a deceased person was a member of an insurance association was the next point raised in the question—Whether, in case counsel should be of opinion that the last-named parties cannot be so excluded, the total sum recoverable under the Employers' Liability Act, and under Lord Campbell's Act, and the general law, would, in case the deceased was a member of the society, be the balance between three years' estimated earnings and the benefits receivable by the relatives under the rules of the society? The answer was—"We are of opinion, as above stated, that the parties can be excluded, and therefore this question does not arise. We may say, however, that it is clear that the sums received under insurances or otherwise must be taken into account in assessing the damages to which the party is entitled. But it is open to contention under the terms of section 3 of the Employers' Liability Act, that if the damage sustained can be shown to exceed monies from insurance, &c., by any amount within the sum representing three years' earnings, the amount of that excess would be recoverable, and it is impossible to say with any certainty what the Courts would eventually hold on this point." There is here a matter certainly of not much significance, which is open to dispute, but time and the courts of law will ultimately settle it.

The question as to the drawing up of the form of service where the provisions of the new Act are not to be carried out is a most important one, and mineowners and others will be glad to find that a form has been drawn up by the learned counsel, which we give below. It should be adopted in all cases where the masters and workmen have agreed to contract themselves out of the Act by forming an insurance society. The wording of the query was—"Whether, supposing a contract can be made, it can be affected by conditions of service posted up? If so, whether the conditions of service suggested legally carry out the intentions of the parties? If not, in what form such conditions of service should be? If conditions of service will not be sufficient counsel is instructed to prepare such a form of contract of service as will carry out the intentions of the parties, and will advise the committee what formalities (if any) are necessary on the signature, and whether or not such contracts would be liable to stamp duty?" The answer was—"The contract can be effected by conditions posted up in the names suggested, but it must be remembered that in order to prove the contract the consent of the workman must be proved—e.g., that he saw it, and, seeing it, entered upon the work. It is not essential that the contract should even be in writing at all (see BEESTON v. COLLYER, 4 Bing., 309), and it need not be stamped, as it is hire of a labourer, artificer, or manufacturer (Stamp Act Schedule—exemption to stamps on agreements)." The best plan is probably that suggested in the Further Instructions in this case—a book, which the workmen should sign upon entering the service. If with respect to the drawers (labourers employed by miners) it is practically impossible to get them to sign the book conditions such as are suggested in the case should be posted up where

they can see it, and it should be part of the agreement with the miners that they should call the attention of the drawers to the conditions. We see nothing to object to in the suggested conditions of contract. But we think the fourth condition would be better in the following form:—

"In consideration of such payment by the employer, and of being employed at these works, and as part of the terms of employment, every person so employed undertakes for himself and his representative, and any person entitled in case of his death to look to the funds of the said society alone for compensation in case of injury sustained in the course of such employment, whether resulting in death or not; and that neither the employer nor any other person in his employment, whether a fellow-servant or not, shall be liable under the Employers' Liability Act, 1880, or otherwise, in respect of any negligence occasioning such injury. No formalities would be necessary upon signing the book except that the signer should have full opportunity of knowing what is in the book. If a separate book is handed to him to take away it would be presumed he read it, but if one book only is kept by the employer, the contract contained in it should be read by the signer."

With respect to rules for insurance societies the question is put upon the propriety of altering the rules of the society in the manner suggested, and whether such alterations are within the powers of the Friendly Societies Act? To this counsel say "We think the consideration of the exact terms of the rules should stand over for discussion, when the parties have more definitely determined what they should provide for."

Questions were afterwards put in the shape of further instructions, the first being—"As to the way in which the conditions of employment shall be made capable of application to obedience to orders given in the course of business?" Counsel reply—"When the contract or conditions do not comprise the whole of the terms of the contract between the parties, they should state that the employment is upon all other usual or customary terms." The only other remaining question was—Whether an honorary member or an ordinary member of the Lancashire and Cheshire Miners' Permanent Relief Society, in case the funds of the society should prove insufficient to meet the claims upon them, would be liable to contribute towards the deficiency, or whether his liability is limited to the payment up of his subscription so long as he voluntarily continues to be a member? The answer was—"We think that neither ordinary nor honorary members are liable to contribute in case of an insufficiency of funds. Apart from the proposed contract the members of the society are not liable to contribute towards any deficiency. A member can only come upon such funds as there are." This is a contingency which we should say is not likely to arise, for we do not believe that the funds of a society will ever get so low as to be unable to meet in full all claims that can be legally made against it. On the contrary, we believe that by increased contribution the funds of the insurance societies will go on increasing from year to year.

The value of the opinions of the learned gentlemen given above, fortified as they are by the cases decided, and to which reference has been made, cannot be over-estimated, so that they cannot fail to be appreciated by mineowners and railway companies, but also by all persons who are employers of labour, and to these we recommend their careful consideration, so that a good and legal understanding can be come to without having recourse to costly and vexatious litigation.

THE DYNAMITE MONOPOLY.

THE ATTEMPTED PROLONGATION OF THE PATENT.

There has seldom been a time when the united action of British miners of all classes has been more urgently necessary than at present, for they are called upon to protect their own interests by using their most strenuous endeavours to prevent the extension of one of the most unjustifiable monopolies of modern times—the Dynamite Patent—unjustifiable because even the judges of the Superior Courts have differed as to the validity of the patent itself, as granting the enormous monopoly claimed for it, and more especially unjustifiable, because the patent has been most arbitrarily and exactly used by its possessors to place British miners at a great disadvantage as compared with their rivals in foreign countries, inasmuch as they have been compelled, as stated in last week's *Mining Journal*, to pay 200l. per ton for an article no better, if so good, as more than one foreign manufacturer can deliver into the same magazines in this country at about 100l. per ton—a price which would doubtless be still further reduced by wholesome competition. With regard to dynamite itself it has been justly observed by Mr. GEO. M. MOWBRAY, one of the best authorities on the subject, that the name is the only real invention connected with it. There has been, perhaps, more sympathy displayed towards Mr. NOBEL in this country in connection with dynamite, owing to the prevalence of the false notion that he was the discoverer of nitro-glycerine—the only active ingredient in dynamite. But in truth the discovery of nitro-glycerine was due to ASCAGNE SOBRERO in 1847, many years before NOBEL knew a burette from a test tube, and everywhere else but in England it is considered that the admixture of nitro-glycerine with an inert substance—any inert substance being quite as valuable for the attainment of the object in view as kieselguhr—was a "principle," and therefore not patentable, and that moreover the admixture was practised as early as the date of NOBEL'S patent, although for reasons of policy the composition was kept secret by the Prussian military authorities, and no patent was taken.

The real point at issue, however, is not so much the question of priority—for it will now hurt no one to give Mr. NOBEL the full credit of it—as the question of contract, and in this connection it may even be admitted that the expiring patent was valid when taken. It is the fundamental principle of the English Patent Law that an inventor is permitted by it to sell his discovery to the public upon certain terms, those terms being that he shall enjoy a monopoly of the invention for 14 years. No inventor is compelled to obtain a patent, but he knows full well that identity of means for accomplishing the same end is so common when several turn their attention to the same subject that the purchase of a patent is a good investment, whilst the advantage gained by the public is that in return for this 14 years' protection the community ultimately acquire a knowledge of valuable details which might otherwise be kept secret, and be lost on the death of the inventor or discoverer of them. So far it is a mere matter of contract—14 years' monopoly in exchange for 175l., and the details of an invention involves a considerable expenditure of time and money, so that an insufficient proportion of the 14 years remains for the inventor to reimburse himself, and secure the reward he is entitled to for the benefit he has conferred on the public, hence the Privy Council are sometimes induced to prolong the monopoly for another seven years to ensure full justice to the inventor; but as the principle of the Patent Law assumes that the nature of the contract is such as to make the inventor's remuneration dependent upon the extent to which his discovery is appreciated by the public prolongations are by no means granted as a matter of course.

And it cannot be too strongly urged that the dynamite patent is one the prolongation of which ought, in simple justice, to be refused, for not only have the holders been handsomely reimbursing themselves for many years past by charging cent. per cent. profit upon every pound of dynamite, but they have actually charged twice the price at which other manufacturers can afford to sell an equally good article and still earn a profit. It is for this reason, amongst others, that the prolongation of the dynamite patent must be opposed to the utmost, and as this will necessarily involve outlay for the employment of counsel and preparation of briefs, it is earnestly to be hoped that every mining company and every mine adventurer will forward some subscription, however small it may, to ensure that the necessary funds for the opposition shall be forthcoming, and still more to show that they sympathise with and support the movement which, be it remembered, is being made in the common interest of every consumer and every user of dynamite throughout the kingdom.

It was announced in last week's *Mining Journal* that a meeting of those interested in mines would be held on Wednesday at the offices of Mr. PETER WATSON in Austinfrirs; and the number and position of those who attended suffice to demonstrate the great importance attached to the subject, and the excessive liberality with which the

holders of NOBEL'S patents have rewarded themselves for introducing what is acknowledged to be a valuable invention. As to whether the patent should have been granted at all is a question not now worth discussing, especially as, giving the holders of it the benefit of the doubt, it is obvious that they have been excellent well rewarded for the advantage which the introduction of dynamite has yielded. The Council of the Mining Institute of Cornwall are already exerting themselves to secure the combined opposition of miners and quarrymen generally, and at the London meeting, that the larger mines should subscribe 10*l.* each and the smaller 5*l.* towards the expenses to be incurred, it being understood that any surplus funds will be returned *pro rata* to the subscribers. The matter is one in which miners and mine adventurers must move at once, or it may be too late; and that there shall be no miscarriage of the matter through delay, it may be announced that subscriptions, whether from mines or individuals, should be sent at once to Mr. PETER WATSON, 18, Austinfriars, who will see that they are gratefully received and faithfully applied. The movement deserves the hearty support of every one connected with mining, and we wish it every success.

SMOKELESS COAL FOR LONDON CONSUMPTION.

It appears that a National Health Society has been established for the purpose of using smokeless coal in the Metropolis, who have come to the resolution that the smoke nuisance, so injurious to health, can only be averted by the use of anthracite coal. The smoke arising from the coal now consumed in London we are told causes the death of thousands of the inhabitants. We always have considered London to be fully as free from smoke as any town in the kingdom considering its size, and far more so than many of our manufacturing centres. Actuated, no doubt, by the best of intentions the gentlemen who are moving in the matter will soon find that the scheme is impracticable, and for more reasons than one. Anthracite coal, of which they speak in the highest terms, is by no means adapted for household purposes, and is entirely out of the question for gas making. London consumers would find it no easy matter in the first place to ignite it, which to them in the shape of time is of some little importance. But were it possible to improve the health of London and our large towns by the adoption of anthracite coal we should like to know where it was all to come from, and what would become of other large mining districts if the whole of the South Wales field of smokeless coal was opened out. The anthracite districts are in the western part of the field, for the seams undergo a marked change in their extension from east to west, commencing with the bituminous or gaseous coal, then the semi-bituminous or steam coal, and further to the west shows the anthracite. London alone consumes 10,000,000 tons of coal annually, and South Wales produces about 12,000,000 tons, a comparatively small proportion of which is anthracite; therefore, it may be assumed that to supply the Metropolis with anthracite coal is simply an impossibility.

But after all is the smoke made in the Metropolis actually injurious to health? Medical men do not say that it is, and Mr. HULL, in his work on the Coal Fields of Great Britain, truly says that years of experience have proved the fallacy of the imputation that the smoke so contaminated the atmosphere as to make it injurious to the public health. So far back as 1306 there was a similar outcry, and we are told that this became so general that the Lords and Commons in Parliament assembled presented a petition to EDWARD I., who issued a proclamation forbidding the use of the offending fuel. But the proclamation against the coal was not much heeded, as its value was soon recognised where it was for a time dispensed with. It will, however, be seen that the gentlemen who have now taken the matter in hand have a precedent to guide them, although a very old one. But it has not yet transpired what course they purpose to adopt in carrying out their philanthropic scheme, whether by application to Parliament, or the power of persuasion. One, no doubt, would be as successful as the other. But it is not only smoke that is being battled with, or at least about to be, but London fog is also to be attacked in front and rear, for we are informed that in connection with the National Health and Kyrle Societies there is a Fog and Smoke Committee, with powers, no doubt, to make everything in their department clear and palatable. We are not told how the metropolitan fog is to be overcome, but it will in all probability be largely prevented by the adoption of smokeless coal. The London Health Society are about to make experiments, not only with the anthracite, but other descriptions of coal and appliances, as we understand, at South Kensington. What they will gain by so doing we are unable to see, for they will be powerless to do away with the Wallends of the North, the Silkstones of Derbyshire and Yorkshire, the Arley seam of Lancashire, and the bituminous coals of South Wales, so far as the London market is concerned. A few enthusiasts and members of the societies we have alluded to may adopt it, but so far as the London trade is concerned it will be a mere drop in the ocean. The owners of anthracite mines in South Wales, as might be expected, favour the project, for it is to their interest to do so, seeing that it is a description of coal that is not much enquired for, although well adapted for many purposes other than domestic consumption, despite its great durability. At a recent meeting at Swansea of the owners and lessors of mines working the anthracite coal the value of it was, of course, fully dilated upon, and a motion was agreed to that the Great Western, the London and North-Western, and the Midland Railway Companies be asked to co-operate with the colliery owners and lessors of collieries with a view of securing an adequate supply to the Metropolis of anthracite and other smokeless coal, and that they may be asked to subscribe towards the experiments to be made by the National Health and Kyrle Societies. Railway companies, like the Midland and others, are not likely to leave the mining districts they are so intimately connected with by branch lines and sidings made at heavy cost for the purpose of favouring such chimerical notions, or for the benefit of a few persons in South Wales. Anything less practical, indeed, than the doing away of smoke in the Metropolis by the burning of anthracite coal has scarcely ever been brought under public notice, no more than is the statement correct that thousands of persons die annually from the smoke itself. But those who propose to keep the Metropolis free from smoke and fog have a by no means easy task before them. At the same time we wish the Fog and Smoke Committee of the National Health Society the most complete success in their endeavours to do away with two most unpleasant and annoying elements connected with our atmosphere.

THE PROPOSED MINERS' CONFERENCE AT MANCHESTER.—The conference of miners, convened for Jan. 10 next, and to be held at Manchester, it is said is likely to be the most important that has yet been held of representatives of the mining body. It is stated in the circular which has been issued that further legislation is rendered necessary by the development of coal mining since the passing of the Act in 1872, and the many calamitous explosions that have taken place. Since 1872 nearly 1500 lives have been lost in explosions alone. The other subjects to be brought under notice are the Employers' Liability Act, together with the action of such districts as have contracted out of it. The responsibility of chief managers, who ought to be responsible for the safety of the mine, is also to be considered, whilst it will be proposed that the underviewer should hold a second-class certificate, and deputies and firemen be examined as to their knowledge of gases, &c., before they are allowed to act. The subject of inspection is to be discussed, and also the driving of drifts or headings in opening new mines, and the necessity for more shafts. The use of powder for blasting, and the more rigorous carrying out of the 30th, 60th, and 61st clauses of the Mines Regulation Act insisted upon. Then for discussion, there is to be the ventilation of mines, examination of the workings by the miners, additional inspectors, lectures to the men, danger signals for showing atmospheric changes to be placed in all mining centres, safety-lamps, fatal accidents, &c.; the necessity for having ambulances ready in case of accidents, the true weighing of every cart sent out of a mine on its reaching, and the periodical inspection of the weighing machines. The last question for consideration is the best means to ensure better organisation of working miners throughout the country. The above, which is a mere enumeration of the subjects to be con-

sidered, show the importance that will attach to the conference if it proves a really representative assembly, in which case doubtless the conclusions arrived at will have considerable influence on future legislation relating to coal mining. Seeing, however, that some of the past legislation has only increased the cost of coal without improving the miners' wages, but rather the reverse, it is to be hoped that moderate counsels will prevail, and decisions come to of a practical and beneficial character.

COLLIERY EXPLOSIONS.

The late explosions have been of a most violent character, and it is very remarkable that the last three have all occurred about the same time of day, or, rather, of the night, from 1 to 3 o'clock, A.M. They have all occurred, in fact, during the working of the night shift, and the question naturally arises how this curious circumstance is to be accounted for. Possibly it may be put down simply as a coincidence; it does not appear to be probable that any atmospheric changes occurring in the night as compared with the day can be found to account for it. Dreadful as the result of these explosions in the loss of life and property has proved to be, if they had occurred during the working of the day shift the result would have been much more disastrous, and it is evident that if colliery owners are to continue liable to those accidents, and also to heavy damages for loss of life under the new Act, which comes into operation shortly, absolute ruin may overtake men of moderate means any day. There is no doubt that in many cases there is more danger of the occurrence of an explosion during the night shift than during the day when it is not necessary to fire shots to blast the coal. There is no blasting whatever taking place during the day shift in such mines, and any necessary blasting at stone work on the roads, at faults, &c., is done under special supervision at night, also in many cases when coal working is not carried on at night only shift men and stone men are in the mine. It is obvious that in those cases the danger of an explosion must be reduced; the attention of the men who have charge of the shift and roadway men, and the supervision of shot firing, is not distracted by the men and lads engaged in coal getting, and it must also be observed that in those cases comparatively few hands are employed, only a few hewers being employed, who are engaged in loading the wagons left empty when coal drawing in the day shift has closed.

It is hardly necessary to observe that all fiery mines must of necessity be worked with locked safety-lamps, and shot firing in such mines must also be reduced to the narrowest limits possible, and when absolutely necessary should only be practised under the most careful supervision. But the main point still remains—that is, the prevention of accumulations of gas, not only in the roads and working places, but also in the goafs and old disused workings. That this is a matter of much difficulty is well known to all practical men. No doubt large quantities of air are put in circulation, but the area of the works to be ventilated has also been largely increased. The coal worked per day by one or two shafts has been increased during the past 30 years about five-fold; 30 years ago 400 tons per day was a fair quantity for one pit, from 80 to 100 hewers being employed; now five times this quantity is raised in some cases, and about 500 hewers are employed, and the area of the workings has, of course, been extended in proportion. This is an absolute necessity. So that it is clear that as improvements in ventilation have been made the extent of the workings have been vastly increased, and there is little doubt that the extreme violence of the late explosions is due to the fact that large quantities of air are in circulation near the shafts in the main intake and return air ways, those airways, of course, being very large in area. Accumulations of explosive mixtures under ordinary circumstances in the workings, roads, or goafs ought certainly not to be tolerated, otherwise a defective lamp, an explosive current, or the firing of a shot, may possibly cause a catastrophe more awful than any hitherto experienced, if an explosion occurs in a mine when (say) 700 men and boys are employed.

It has been proposed to put down bore-holes into goafs, or at the edge of the rise workings, where much difficulty is met with from gas, that is from the surface, and as holes can now be put down rapidly and cheaply by mechanical power there is no reason why the experiment should not be tried. A bore-hole from 8 in. to 12 in. in diameter, and a small fan placed at the top of such hole might possibly prove of very great benefit. If Mr. Plimsoll had adopted this scheme instead of proposing to insert a pipe for the purpose of bringing the gas back to the upcast shaft his plan would have been more worthy of attention.

We have already remarked on the extreme violence of the late explosions, and this appears to be due to the large quantity of air in circulation, paradoxical as it may appear; it is probable it may be found that the great defect of the present system is the position of the two shafts, the whole of the return air, more or less vitiated, having to be brought back nearly to the start when the coals have to be drawn, and which is the only outlet for the men. It is possible that it may be found that this system may be improved, and that where the coal field is large a different position for the shafts, or an increased number of them, may be found to be more economical as well as more safe. The present system entails great expense in forming air-ways of large size and great lengths, and any change in the position of the shafts, or increase in the number of them, or the introduction of bore-holes, would reduce the cost of making and maintaining those air-ways to a considerable extent.

THE TELEPHONE, AND INVENTORS' RIGHTS.

Although everyone will regret that the inventors of so beautiful an instrument as the telephone should be deprived of one iota of the credit due, or of one penny of the profit to accrue from the discovery, it will be obvious, even to those whose minds are untrained in legal matters, that whether considered as a question of law or of equity, it was impossible that the use of the telephone, as it was intended to use it, was an infringement of the monopoly of the Postmaster-General over the telegraphs of the United Kingdom, for which the country paid heavily but a few years since. As Mr. Justice Stephens pointed out, the Postmaster-General was, by the terms of the contract of purchase, to have the exclusive privilege of transmitting messages or other communications, by any wire or apparatus connected therewith, used for telegraphic purposes, or by any other apparatus by means of electric signals. The result seemed to be that any apparatus for transmitting messages by such signals was a telegraph, whether a wire was used or not. A penalty of 5*l.* was imposed in the event of any infringement of the statute; in this case the Government had not asked for any such penalty; but the question for the Court was whether there had been an infringement—whether an offence had been committed. In the course of the arguments a good deal had been said upon the nature of sound. He did not think it necessary to enter into a controversy which was more scientific than legal, and perhaps more properly metaphysical, or relative to the meaning of words, than scientific. It was enough to say that whatever might be the merits of the controversy, it did not appear to the Court that the fact—if it were a fact—that sound itself was transmitted by the telephone, established any material distinction between telegraphic and telephonic communication, as the transmission, if it took place at all, was performed by a wire, acted on by electricity. The Court was of opinion, therefore, that—fully admitting all that had been or could be said as to the novelty and value of the telephone transmission—the whole apparatus, taken together formed a wire which was used for the purpose of telegraphic communication. Instruments were connected with it in order to convey information by electricity, and this was the telegraphic communication.

That sound is transmitted by the telephone is not pretended by any electrician with any pretension to scientific accuracy, and before a learned society none would be less likely than Messrs. Graham Bell, Edison, Hughes, or men of similar rank, to support such a contention; and the contention for the defendants that the Acts of Parliament of 1868 and 1869 could not refer to the telephone because that instrument was not invented until years after was altogether untenable, scientifically as well as legally. The learned judge remarked that the scientific world for its purposes might make a distinction, but the Court was of opinion that the telephone was a telegraph within the definitions of the Acts of 1868 and 1869. It was

then argued for the defendants that the Legislature never applied the Acts as against telephones. Of course, in one sense the Legislature did not refer to the telephones before they were invented, but the words of the Act were wide enough to refer to future discoveries in electric science. It was difficult to suppose that the Legislature intended to grant a monopoly so liable to be evaded and to be construed in so limited a sense in a science which was one of the most progressive known at the present time. The defendants then sought to establish a difference between a telephone and a telegraph, because in the latter case messengers, transmitters, and signals were requisite, whereas there was no such requirement in the former instrument. In the opinion of the Court, however, such requisites were only links in the chain, and signals were only imperfect substitutes for words. If the Court decided in favour of the defendants upon these grounds it would have to be said that imperfections in the instrument were essential to the apparatus, and that their removal would be a destruction of it.

Now as a matter of fact the telephone no more transmits sound (unless we take the word transmission in a figurative sense) than a pianist or a drummer, and in the case of the telephone the difference between it and the roughest needle instrument is merely one of degree. The telephone is a marvellous advance toward perfection no doubt, but its action involves the application of similar arrangements in every respect. The sound is not in any sense transmitted by the telephone, but the transmitting and receiving instruments are made so extremely sensitive that their vibrations when the electric current passes through them correspond so accurately that sound waves are produced by the receiving instrument in every respect identical with the sound waves by which the transmitting instrument was disturbed. The means by which the telephonists reproduce the voice and Mr. Cowper reproduces the transmitter's handwriting are absolutely identical, however much the results may differ, so that the learned judge really appears to have been too lenient to the telephonists when he remarked that reference had also been made to Cowper's electric writing instrument and Hughes' spelling machine, but no real distinction existed between those instruments and a telegraph, and it was difficult to see what difference existed for the purposes of this case between Cowper's instrument, which might be described as an elongated pen, and the telephone, which might be described as a long speaking trumpet. Considerable discussion took place upon the use of the words message or communication in the Acts, and upon reviewing the use of those words in the statute it was evident no such narrow or restricted meaning of the words as contended for by the defendants should be adopted as to confine them to the application to a written message handed by a clerk or a messenger. The defendants further contended that if the telephone infringed the statute the use of the instrument in the manner adopted by them brought it within one or other of the exceptions of the Act of 1868. It was urged that under those exceptions two persons would be able to keep a telephone for the purpose of communications interesting to both of them, that strangers would be allowed to use the instrument provided no charge was made upon them, and that such wires could be connected with similar wires until the whole kingdom was covered with a network of telephonic communication. Such a result would be against both law and fact, especially as in the present case the wires were not owned or maintained by the subscribers nor used exclusively by the owners. There was also a charge made upon the subscribers in the shape of rent for the transmission of messages, from which sum the defendants acquire profit.

Taking all the arguments into consideration, the Court gave judgment for the Crown with costs, with a declaration to the effect that the defendants had infringed the Act, that an injunction should be issued staying the use of the telephone by the defendants, and an order for an account to be rendered by the defendants of all moneys received and messages sent, and the Court also held that all subscribers as well as the defendants were implicated. Mr. Webster said the defendants undertook to keep the best accounts they could as to the number of persons who were put in communication with one another, and as to the money received on account of messages transmitted. There was no suggestion of *malá fides* in the matter. The Attorney-General thought that the most becoming course for the Postmaster-General would be to leave the matter entirely in the hands of their lordships. Mr. Baron Pollock said the impression of the Court, from a general view of the case, was that there would be no harm done, either to the Postmaster-General or to the public, in allowing the company to continue its operations for the present, subject, of course, to the order made by the Court, and Mr. Justice Stephens concurred with this view, remarking that the Court desired, of course, to treat the defendants fairly and properly in all respects. They had brought before the public a beautiful invention; but they had taken a wrong view of the construction of the Acts of Parliament.

NEW ROCK-DRILL AND AIR-COMPRESSOR.

The economy of machine mining depends so largely upon the perfection of the machines that every step in advance is of the utmost importance, and the latest Californian air-compressor certainly appears to be among the best both for compactness and efficiency; it is the invention of Mr. Henry Richmann, of San Francisco. The bed-plate and standards or pillars are made hollow, and on the upper plate is formed a tube connecting the upper end of these standards, and the whole space thus connected serves as a reservoir for the air compressed by the air piston. The steam-cylinder is placed on the bed-plate, and has two piston-rods connecting with a cross-slide above. The air-compression cylinders on the upper plate also has double piston-rods, which are connected below to a cross-slide. Guide-rods keep the motion of the slotted cross-head in line, sliding claps fitting around these guides form the cross-head, and preventing lateral motion by their peculiar construction.

Combined with these cross-heads is a peculiar three armed or compound crank, by means of which the inventor is enabled to utilise the power of the engine in a most economical manner for compressing the air. Ordinarily the crank of the engine operates a shaft on which there is another crank for communicating motion to the piston of the air cylinder. This necessitates the air-compressing engine being some distance from the engine cylinder and very much out of a direct line, and the air-compressing appliance is correspondingly enlarged. Neither of the three arms of the compound crank are in line with one another, nor is either one at right angles to any other, but they are so arranged with relation to each other and the crank-pins that the greatest power of the engine is exerted at its most effective point, with relation to the air-compressing piston—that is to say, at the moment when the air in the compressing cylinder has been half-compressed by its piston being moved halfway up, then the crank of the engine cylinder is nearly at right angles to the line of travel of the piston of the engine cylinder, and at its most effective point for exerting the pressure necessary to compress the already partly compressed air in the compression cylinder. The same is in the case on the down stroke.

The air piston commences its return stroke before the engine piston has reached the end of its stroke, and the peculiar connection of the two cranks and their uniting arms with the sliding boxes on the cross-slides is such that as the engine begins to reach the highest or lowest point of its stroke it is forcing the sliding box of the air piston cross-slide transversely to one side of its slotted cross-head, and this box becomes nearly stationary at the time when the engine crank is passing its dead point, so that the absolute work of the engine is at a minimum while the crank is passing the dead point. After passing that point the power of the engine crank increases until it reaches a position at right angles with the line of travel of the piston, and is exerted as a direct thrust upon the sliding box through its connecting arm. By the peculiar formation of the cranks and bringing the two cylinders nearly in line, two complete cranks do not have to be formed, but the central arm which unites the two crank pins serves to transmit the power of the engine to the piston of the air compressor. This arm revolves bodily around the axis of the shaft, as both its ends are connected with the crank pins, and its action is, therefore, that of a pitman or connecting rod, its peculiar movement being made possible by the action of the two transversely moving boxes and their vertically moving slides.

This mechanism makes it possible, adds the Mining and Scientific

Press, to compress air to 140 lbs. with 70 lbs. of steam, the compressor having steam and air cylinders of the same capacity. By having the double piston-rods, whether the valves are in the cylinder head or in the piston, said valves may be of large diameter, as they may come between the piston-rods. With a large area for the valves their action is rapid and free. With the piston-rod in the centre not half the area can be utilised for valves and seats, but with double rods over half the area may be utilised. An air compressor to run two 3-inch rock-drills is about 4x4 by 7 ft. high, and weighs about 2500 lbs. The compressed air is stored in the frame and base, as previously stated, the frame being the air receiver. The compressor is strongly and well made, and after having been tested about a year has been introduced into several mines on this coast.

COLLIERY EXPLOSIONS, AND AMATEUR ENGINEERS.

At the general monthly meeting of the South Staffordshire and East Worcestershire Institute of Mining Engineers, held in the Mining Museum, Dudley, on Monday (Mr. W. F. Hayward, President, in the chair), Mr. Tom Parton, F.G.S., read an interesting paper on the Phenomena of Springs, after which Mr. Henry Johnson, sen., called attention to Mr. Plimsoll's article on "Explosions in Mines, and their Care." Mr. Johnson said it was at all times a pleasing duty to refer to anything which had been written on their profession when there was a philanthropic and a sensible object in view. But when they found misrepresentations or ignorance, however good the object was to be, it would have been better had the writer left the subject alone. In the article written by Mr. Plimsoll he took exception to everything which the writer tried to say. He (Mr. Johnson) had never read anything with such pain as he had the article in question. In the first place Mr. Plimsoll asked "Can we, then, unmask this gas? Can we make it visible to the eye, like smoke or steam?"—If you take some half sheets of note paper, and trace upon it with a camel's hair pencil, dipped in acetate of lead a single word, like 'beware,' 'run,' 'escape,' or 'fire,' and then take any one of these, and expose it to sulphuretted hydrogen, each of these words, although up to that time totally invisible, would become black in a few seconds.

It was Mr. Johnson's opinion that the safety-lamps would do all that was suggested, and do it quicker. Mr. Plimsoll then went on to say—"If a vertical recess were chased in the side of a passage or place in the pit in the coal, and the front were glazed, leaving open the top and bottom, and if then a balloon of collodion, like the children's toys, were filled with a light carburetted hydrogen, and put into these recesses, it would float upon the stratum of common air, because filled with a lighter gas than would remain at the bottom of the stratum of the gas, because kept down by the weight of the envelope enclosing it." Mr. Johnson held that if this recess was in the coal it could not stand the strain of a pit at work, and would be broken directly. Mr. Plimsoll, in the third place, asked—"Can this gas be absorbed; that is to say can any means be found of absorbing it as it escapes from the coal?" Mr. Johnson held that to a practical mind the idea of absorbing all the gas given off suddenly in an extensive pit was most absurd.

Then Mr. Plimsoll asked whether this gas should be loaded or neutralised in some manner that would render it non-explosive. The gas which gave them trouble was found without loading; but Mr. Plimsoll went on to ask a question which showed that he was going a long way back instead of forward. He asked—"Can this gas be exploded in regulated quantities with safety? That is to say if naked lights were kept constantly burning in those parts of the pit where the gas was found to accumulate, could it be regularly fired in regulated quantities, which would not do mischief." Mr. Johnson said that was the way the explosions occurred, and it was the way the old butties cleared out a working 60 or 80 years ago. There was no way of regulating the escape of such a gas. Mr. Plimsoll, however, proceeded—"If we could only make fire-damp as visible to the eye and as obnoxious to the respiratory organs as was the London fog of last January, we should have gained a great point." And further on he comes to his great point, and he says—"I would make a hole or sump for the accommodation of the gas, but as the water is heavy, and lies on the floor, and has the sump for it made in the floor, so my hole or sump to gather the gas should be in the roof of the mine, and that in the highest accessible places. I would then place a vertical tube, with an open trumpet shape mouth, something like the funnel or chimney of a locomotive, in this place, and of such a length that the open mouth, which should be protected by a covering or cap to keep out the dirt, should reach up very near to the roof. The bottom end of this pipe I would continue to the bank of the pit, and I would pump out the accumulation of light carburetted hydrogen."

Further on Mr. Plimsoll talked about "then gas, pure and simple, would be drawn off, or if the outlet at bank were left open it would come of itself, would syphon itself out up the shaft. It would be easy to test from time to time with a light what was being drawn off, taking the precaution to disconnect the sample." In conclusion, Mr. Plimsoll summarised his suggestions in the hole and in the roof, and he (Mr. Johnson) was sorry to see so able a man write so on a subject he himself confessed he knew but little about.

Mr. T. Parton said there was more ignorance in some of the newspapers, and leading newspapers too. The Daily Telegraph spoke of carburetted hydrogen as a very heavy gas.

Mr. Farnworth thought somewhat similar ignorance existed among their legislators in the House of Commons, considering that they produced such Bills.

The President said it was scarcely possible to take up a newspaper immediately after an accident without finding mistaken remarks on the cause and effect of the accident. He had a case in his mind in which a breakage was said to be due to want of care in inspection, although the machine was looked over every day. Of the practical value of such discussions as these it is scarcely possible to speak too highly, and both Mr. Johnson and the Institute are entitled to warm congratulations for bringing the matter forward.

THE DYNAMITE MONOPOLY.—The West Briton remarks—"All our correspondents concur in saying that miners should take action as soon as possible. It appears monstrous that miners in Cornwall should have to pay 2s. per pound for that which can be obtained for 10d. in Germany. It is said that the Dynamite Company paid a 50 per cent. dividend last year, and if this is so they could afford to make an important reduction in the price of this article. We have not the exact figures before us, but we presume that such a mine as East Pool would pay for dynamite from 60% to 80% per month—from 700l. to 900l. a year. The saving of one-half of this cost would be very important to this one mine alone. Probably Wheal Pevor, a much smaller concern, where the ground is softer, would pay from 20l. to 30l. At any rate it is incumbent that a meeting should take place as soon as possible, when the matter could be discussed, and the business put on a proper foundation."

THE ELBAN IRON MINES.—It is stated that next June the Government concession of the iron mines of Elba to Bastogi and Co. will terminate, and the question is now being discussed between the Minister of Marine and the Minister of Agriculture and Commerce whether to renew the lease, or whether the Government will take the mines into their own hands. Some time ago they entertained the idea of establishing a large foundry in Elba, in order to work the iron ore on the spot, which would certainly be a great advantage, as it is at present nearly all sent to England to be manufactured. Last year the Ministry of Marine alone paid taxes on constructive material amounting to more than 60,000 lire. The Government has the greatest desire to encourage national industry, but the means are often wanting. The result of the consultation between the two ministers will decide whether Italy, under direct and commercial administration, will be able to profit by its native mines.

THROAT IRRITATION.—Soreness and dryness, tickling and irritation, inducing cough and affecting the voice. For these symptoms use Epps's Glycerine Juices. Glycerine in these agreeable confections, being in proximity to the glands at the moment they are excited by the act of sucking, becomes actively healing. Sold only in boxes, 7½d., and 1s. 1½d., labelled "JAMES EPPS and Co., Homoeopathic Chemists, London." After receiving "Gentlemen—It may, perhaps, interest you to know that, after an extended trial, I have found your Glycerine Juices of considerable benefit (with or without medical treatment) in almost all forms of throat disease. They soften and clear the voice. In no case can they do any harm.—Yours faithfully, GORDON HOLMES, L.R.C.P.E., Senior Physician to the Municipal Throat and Ear Infirmary."

KAPANGA GOLD MINING COMPANY OF NEW ZEALAND.

The details contained in the subjoined report will be of interest to the shareholders generally:—

GENERAL FORMATION.—Professor Hochstetter, the eminent German geologist, and Dr. Hector, geologist to the New Zealand Government, report that the geological formation of the Coromandel Gold Field is precisely the same formation and continuation of gold-bearing country as the Thames Gold Field.

PAST HISTORY.—The first gold found in New Zealand was discovered on the present site of the Kapanga Mine, in 1851, by two Californian miners, Messrs. Charles and F. Ring, by finding the Kapanga lodes cropping up in the bed of the Driving Creek, yielding exceedingly rich gold quartz and loose rough gold, which was knocked and washed off the backs of the lodes by the action of the torrents from time to time. In 1854 terms were made by the Government with the natives, and the field opened to miners, when a large "rush" took place of some hundreds of Australian diggers, who eagerly secured the ground and creeks adjoining the discovery. No estimate or record can be found what amount of gold was obtained at this period.

THE OLD KAPANGA COMPANY was formed in Auckland, in 1864, when the whole of the claims were purchased and amalgamated, and the ground worked somewhat systematically by pumping, winding and steam-crushing machinery, which enabled the shaft known as the "Coromandel engine-shaft" to be sunk 235 ft. from surface. By some great mistake the shaft was sunk in the wrong position, and intersected the lode at about 80 ft. deep at the adit level. Consequently, the deeper it went the more distant and inconvenient for working on the lode, and necessitating long cross-cuts (of dead work) at every level, entailing an endless, useless expenditure. The machinery was not of sufficient power to go deeper. The company then foolishly fixed a small two or three horse-power portable engine underground at the 235 ft. level to continue sinking on the gold. After sinking 90 ft. on the course and underlie of the lode the engine became disabled, which immediately stopped the mine and killed the company. The late manager, Mr. Reeves, said he met and carried rich gold all the way down as far as he could sink, and also said the best month's return during the four years the mine worked was 1200 ozs. melted gold. The total returns of gold sold for four years by this company were as follows, which I copied from the secretary's sale book:—1864 to 1865, 10,057 ozs.; 1865, 16,513 ozs.; 1867, 8431 ozs.; 1868, 5820 ozs. and 597 ozs.; total, 41,518 ozs. melted gold, showing an average of over 10,000 ozs. per year the mine was worked by the late company.

At this stage of their operations, the machinery becoming useless, the company stopped work for a time, and ordered from England a powerful pumping engine to resume work by sinking a new shaft in the proper place. Before this engine arrived at New Zealand the wonderful rich discoveries of gold week found at the Thames in the face of the hills; at the foot of the sea beach quartz reefs cropping up to the surface yielding in large quantities half gold to half stone. These discoveries diverted everyone's attention to the New Thames field, and the Kapanga Company went with the "rush," and took up claims and erected the Kapanga machinery, where I have seen at work, the directors in the meantime having no idea of anyone securing their old idle mine. I arrived at Coromandel in January, 1870, and found the mine remaining in the position above described. After a great deal of enquiries, and getting the opinion and report of the late manager, with many others, the oldest practical mining authorities here, all testifying to the high merits of the property, and expressing their combined opinions of the mine being one of the safest mining speculations in this country. I felt a pleasure in recommending the undertaking to English capitalists in 1871, furnishing them with all my evidence and information respecting the mine and undoubted value of the mine and property. The set is 1200 ft. long on the run of lodes, by 600 ft. wide, and contains two parallel lodes bearing nearly due north and south, and dipping west about 40 degrees. No. 1, or "Kapanga Lode," is the most known or proved, and generally averages 3 to 4 ft. wide, being exceedingly regular and well defined of solid, compact quartz, and at times consists of soft sugary quartz and killas, highly charged with minerals of auriferous iron pyrites, antimony, and metallic arsenic. The No. 2, or "Scotty's Lode," is parallel, and distant east some 20 fms., bearing and underlie the same as the Kapanga lode, and is similar in size and composition. Although it is not in the Kapanga belt at the surface, it underlies into it about the 50 fm. level.

ITS PRESENT CONDITION.—The late "New Zealand Kapanga Gold Mining Company" (Limited), commenced operations in January, 1872, and since that time have sunk a new engine shaft 50 fms. from the surface, and drove a cross-cut at that depth to the lode, erected powerful steam pumping, winding, and stamping machinery, besides completing other expensive works hereinafter mentioned. The engine shaft is a fine commodious shaft, 14 ft. by 8 ft. within sets, divided into engine and winding compartments. The pitwork consists of three 10 in. drawing lifts, about 16 fms. each in length, the winding shaft being fitted with guides and cages, hoisted by a strong wire rope working on a drum and pulleys 6 ft. in diameter, lifting tram waggon containing half a ton of stuff. Cross-cut: At the engine-shaft pit, at the 50, a cross-cut is driven nearly due east 70 fms., intersecting the lode which drained the whole of the old workings.

No. 5 level is driven north on the cross-cut on the course of the lode 70 fms., and a 13 fms. drive is driven north as principally done to see if the Albion run of the gold-bearing ground could be found at this level, as it was very productive from surface to the old No. 3 level, and was expected to be seen in about 50 fathoms driving. On arriving at this point the ground was very much disturbed by a great slide or horse, which no doubt accounts for throwing the shoot off out of its regular course. At the 50 a little gold was obtained in places, but nothing of importance was obtained, or the Albion lead met with. The drive south for 18 fathoms was principally all through the shoot known as the Coromandel run, which produced magnificent specimens, and generally proved very good for the amount of ground sunk and stopped on it. These two runs or shoots of gold-bearing ground have been worked and traced down from the surface, being some 50 fathoms apart, and 40 to 50 fathoms in width. The lodestuff between the shoots is poor, and in some places almost barren.

Nos. 6 and 7 Levels: As the winze was sinking at every 10 fms. distance these levels were driven on the lode north and south, the levels south of the winze being driven 8 to 10 fms., and the level north 4 and 5 fms. A good deal of ground is stopped away from No. 6 to No. 5 level, which yielded principally the gold that was sold, and was such a good yield, over 5 ozs. per ton. The lode was also greatly disturbed in these levels, more so to the north of the winze than the south, no doubt by the same slide which came in the No. 5 level, as above mentioned. In No. 7 level the "horse" seems to be disappearing, another winze getting through it the lode assuming its usual regular true character.

Surface: The machinery erected consists of a 24-inch Cornish beam rotary pumping-engine, with two 10-ton boilers. The winding-engine is one Robey's portable 10-hp. cylinder, to which is attached a double purchase winding-gear, with drums 8 ft. in diameter, for winding with wire rope; the gear is made to answer as steam capstan when required. This engine also drives a circular saw, for sawing all timber consumed. A battery of 10 heads of stamps is also erected, and is driven by the pumping-engine, and foundations being laid for erecting 25 stampers when they are required. Amalgamating appliances, Berdan pans, with other attachments belonging thereto, are all in good order for treating gold quartz operations. The spare machinery not erected consists of one 50-inch cylinder Cornish beam pumping-engine, with two 10-ton boilers, 25 fathoms of 14-inch pumps, two 14-in. plunger-poles, one H-piece, and 40-head of stampers.

Engineers and important objects general: The important objects to be developed before the mine is proved or the riches may lie undiscovered. The two principal ones are—first, to find the Albion run at the 70, as the slide may have heaved it dipping north, instead of its usual dip to the south. This can only be proved by driving north to discover it. Next, the Coromandel run, we have proved going down regularly. In sinking the main winze 20 fms., the lode at times yielding some magnificent stones of gold, this continuation of gold ground is sure to be intersected at the 70, where, I believe, we shall find the country settled and out of the influence of the slide which caused the piece of ground at the 50. I may say such slides or horses occur regularly in the mines here, and generally from the 50 to the 60 fm. level they are looked on as an indication for making heavy deposits of gold. The backs, to stop away, will be about 50 fms. from the 70 to the 50. I have every reason to believe these shoots of gold will be found as good as we expect, or it is of no use to go by similar examples in the mines of this country. The next object is to cross-cut east at the 70 to cut "Scotty's" reef, which yielded very rich gold by surface workings, and was never tested deeper than 10 to 15 fms. from surface. Taking into consideration the large returns made by the first company, and the gold traced regularly down 400 ft. by the late company, with the immense amount of work accomplished, a magnificent plant erected, and the engine shaft sinking under the 50, I feel confident if the mine is developed at the 70, as above mentioned, that future success is as certain as any mining speculation can be, and if there is not a rich mine found in Kapanga there is no use whatever to look for one in New Zealand.

THE WEEK.

SATURDAY, DEC. 19.—Most American securities closed higher. The arrival here of the President of the Philadelphia and Reading Railroad was announced, and the shares were actively dealt in at 82½. It is thought a meeting may be held by Thursday. Erie shares finished at 84½, and are now at the highest point reached for some time past. The announcement of a good dividend by the La Plata Mining and Smelting Company sent the shares up to 2½, and induced considerable business. Devon Consols fell 10s. Marke Valley receded to 1½. All the changes in home railways were adverse, the little business doing being mostly selling. Brighton, A. gave way ½ per cent., to 147.

MONDAY.—To-day holders of foreign bonds had their turn of depression. Unfined, of late so strong, and on Friday dealt in at 70, tumbled down to 68½. Little Turks from being 12½ relapsed to 12½. Treasury Bonds closed 1 down. Brighton, A. finished at 147. Canadian lines were fairly firm. Trunk Ordinary rose ½, to 25, and the Second Preference ¾, to 34. Erie shares were dealt in at 85, Illinois Central at 120, and Reading shares 82½. Atlantic First Mortgage continue in pressing demand, and to-day reached 60; last account neglected at 55. Devon Consols, 16½; East Lovell, 4½, 5; Hingston Down, 1½, ½; Marke Valley, 1½, ¾; Frontino, 4½, 5½; Flagstaff, 1¾, 1½.

TUESDAY.—At the opening Unifed was very little over 65, subsequently rallying to 68½, but ultimately closed only ½ better on the day. Turks could be bought at 12 during one period of the day. The last price showed no change. Mexican declined ½ per cent., and Peruvians ¾. Reading shares declined ¾, notwithstanding the issue of Mr. Gordon's report in view of Thursday's meeting. The deferred Income bonds are to be issued at 30 per cent., and it is stated that the entire amount of 6,545,000l. is already guaranteed. Devon Consols declined to 15, and Flagstaff to 1½.

WEDNESDAY.—The buying of New York, Pennsylvania, and Ohio (formerly known as Atlantic and Great Western) new bonds was the principal feature in the American market. As already mentioned, the First Mortgage were obtainable at 55, to-day they were done at 61½, closing strong at a rise of 1½. The Second Mortgage Bonds, long neglected at 29, rose 2, to 35. Leased Line Rental trust, 18½, was active at 27. Everything else was dull enough. Brighton, A. relapsed to 146½, the lowest point, with one exception, seen during the present half-year. Rio Tinto shares fell 10s., and Panulicillo 5s.

THURSDAY.—The Committee of the Stock Exchange have allowed La Plata

shares to be quoted in the Official List, and an active business is now being done in them. Orders to buy appear to come mainly from the country. During the last day or two there has been more doing in Canadian Copper, on report of a good discovery at the mines. Most shares of home mines close particularly dull, with nominal quotations, where selling is sought to be done. It is expected that the next Egyptian Budget will show a surplus of over 500,000l. With the scarcity of safe investments it is surprising that the "bears" this week were able to knock down Unifed—certain of 4 per cent. as a minimum—from 70 to 68.

FERDINAND R. KIRK.

WEST PEEVOR.—At the meeting on Dec. 16, the accounts showed a debit balance of 11977. A call of 8s. per share was made. The report of Capt. White stated that the prospects are exceedingly good, and as soon as the communications referred to in the report were made, the agents anticipated that no further calls would be required, but large and profitable returns be made to the company, and they hoped good dividends declared. It was resolved to communicate with the secretaries of the Polytechnic and the Mining Institute, with the view of taking action in the matters of the dynamite monopoly, as being extremely prejudicial to Cornish mining.

CAPITAL WANTED FOR MINING PURPOSES IN NORWAY

Copper Ore realising 14-25 per cent. of Copper, according to Dr. Weiss' Certificate 1027, dated Hamburg, 2nd December, 1880. Apply to H. BAUERMEISTER, 51, Schauenburgerstr. Hamburg.

TO MINING ENGINEERS AND EXPERTS.

WANTED, IMMEDIATELY, A THOROUGHLY COMPETENT AND EXPERIENCED MINING ENGINEER to go to SOUTH INDIA to thoroughly inspect and report on some gold mining properties for an important firm of capitalists. The time occupied by this inspection will not be more than about six months.

Application to be made in writing to PETER WATSON, Esq., 13, Austinfriars, London, E.C.; giving full particulars of qualifications, references, and remuneration per month, exclusive of travelling expenses.

TO SPECULATIVE INVESTORS.

WANTED, ONE OR TWO GENTLEMEN (to join the proprietors, two in number) who have from £500 to £800 spare capital each, to put in a very promising search on land situated on the eastern side of a dale extending from 400 to 450 yards, and comprising upwards of 100 acres of land, through which several lucrative sets or veins of lead ore traverse across, and one lately has been discovered to be within a few yards of the present workings. Apply to J. R. DAVIES, 29, Thomson-road, Seaforth, Liverpool.

ANALYTICAL CHEMIST WANTED.—One accustomed to the Wet Assay of Copper, and the Analysis of Iron, China Clay, Phosphates, Nitrates, Manures, &c. One who has had practical experience in a Laboratory preferred. Apply by letter, stating salary required, and giving testimonials, &c., to "B.R.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

AMERICAN MINES REPORTED ON.

AN ENGLISH MINING ENGINEER AND CHEMIST, at present a resident in the United States, will EXAMINE and REPORT ON MINES and MINING PROPERTIES. Has had a number of years practical experience in most of the principal Gold and Silver Mining Districts of the West, and is fully acquainted with the best systems of Reduction and Smelting in use, and the actual cost of working. Has passed the sanguine stage of Mining, and is accustomed to base calculations on facts only. Good London references. For address and particulars, apply at the Railway News Office, 3, Whitefriars-street, Fleet-street, E.C.

TO STOCKBROKERS.

THE ADVERTISER, who has an extensive connection in Mining matters, WISHES to CO-OPERATE with a STOCK and SHARE BROKER of position and influence for their MUTUAL ADVANTAGE. Address, "Miner," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

THE ADVERTISER is OPEN to an ENGAGEMENT as METALLURGICAL ASSAYER or MANAGER. Has had considerable experience in Copper Smelting. Address, EDWARD MERRY, 28, Hagley-road, Birmingham.

"MINING JOURNAL."—Advertiser wishes to share with a Gentleman in taking this paper, or in exchange for the "Colliery Guardian." Address, "F. G. S.," MINING JOURNAL Office, 26, Fleet-street, E.C.

NOTICE OF REMOVAL.

MR. F. W. DABB has REMOVED his OFFICES to 66, FORE STREET, REDRUTH, Where all communications are to be addressed. Pursuer of St. Aubyn United, Wheal Jewell, and Herodsfoot.—Dec. 18, 1880.

HENRY NUTT AND CO.,

57, BRISTOL ROAD, BIRMINGHAM, PURCHASERS OF LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, TIN ASHES, TERNE ASHES, AND ALL REFUSE CONTAINING TIN AND LEAD.

ABBOTT,	SOUND INVESTMENTS.
PAGE,	THE STANDARD BANK OF LONDON
AND CO.,	(LIMITED).
STOCK	The Shares in this Bank, now offered, will prove a lucrative and safe investment, and will command a high premium.
BROKERS,	Prospectus and full particulars sent post free on application.
42, POULTRY,	INVESTORS seeking Sound and Lucrative Securities should apply for our MONTHLY and WEEKLY LISTS, containing SELECTED INVESTMENTS that are paying from 5 to 10 per cent., and are as safe as Railway Debentures.
LONDON,	CONSOLS, RAILWAYS, FOREIGN, and other STOCKS dealt in at CLOSE PRICES.
E.C.	

TO SPECULATIVE CAPITALISTS.—SEVERAL REAL GOOD AND PROGRESSIVE SHARES IN GOLD, SILVER, COPPER, TIN, and LEAD MINES, also in other Companies, can be OBTAINED A BARGAIN, if bought at once. Address, "Nemo," Target Office, Green-lane, Newland, Hull.

THE FORTESCUE (STANNAGWYN) MINE.—These shares are strongly recommended for immediate purchase. We draw attention to the reports in this day's Journal. The present price of the shares is 2½. THOMPSON and SON, Plymouth, Secretaries.

COAL AND IRON ORE ROYALTY.

TO BE LET, in the WEST CUMBERLAND HEMATITE DISTRICT, a good-sized ROYALTY, containing both COAL and IRON ORE, and adjoining the Cleator Railway. For further particulars, apply to Mr. DICKINSON, Redhow, Lampugh, Cockermouth.

COLONIAL BANK.

Subscribed Capital £2,000,000
Paid-up 600,000
Reserve Fund 100,000

The Court of Directors of the COLONIAL BANK hereby give notice that, in pursuance of the provisions of the Charter, a HALF-YEARLY GENERAL MEETING of proprietors will be HELD at the Bank House, 13, Bishopsgate-street Within, E.C., on THURSDAY, the 6th January, 1881, at Two o'clock precisely, to receive the report of the proceedings of the Corporation, and for the election of five directors and one auditor in the room of the following gentlemen, who go out by rotation:—Charles Cave, Esq.; Harry Hankey Dobree, Esq.; Eden Colville, Esq.; William Davidson, Esq.; and James Fletcher, Esq., as directors; and Henry Pryor Powell, Esq., as auditor; and of whom, being eligible, offer themselves for re-election.

The Transfer Books of the Corporation will be closed on the 20th December, 1880, and re-opened on the 7th January, 1881.

By order of the Court of Directors, JAMES CLARK, Secretary.
13, Bishopsgate-street Within, London, 10th December, 1880.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Dec. 17—Central Foxdale	80	212 17 0	Adam Eytan.	

Date.	Mine.	Tons c. q. lb.	Amount.	Purchaser.
Nov.—Cornwall Great Consols	2 17 0	5	£140 18 5	—
Dec.—ditto	4 4 3	5	211 11 3	—

Shields, 195, High-street, Sunderland.



PARIS EXHIBITION, 1878.

GOLD AND SILVER MEDALS AWARDED for
Steam-Engines & Boilers, also the Special Steam Pump,
and Compound Pumping Engine.

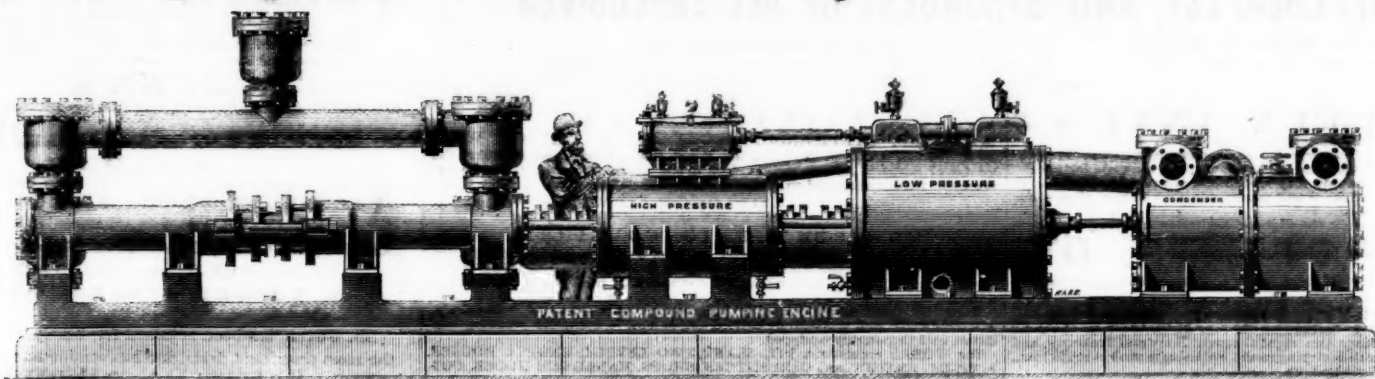


TANGYE BROTHERS AND HOLMAN,

CORNWALL HOUSE, 35, QUEEN VICTORIA STREET, LONDON, E.C.,
 AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,
 And all purposes where Economy of Fuel is essential.



TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

**TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY
 IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.**

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and General Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes. In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:—

TESTIMONIALS OF TANGYE'S COMPOUND PUMPING ENGINE.

21' Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879.

26' x 10" x 48" COMPOUND CONDENSING STEAM PUMPING ENGINE.

Messrs. Tangye Brothers.

GENTLEMEN,—In reply to your enquiry as to the efficiency of the two pairs of Compound Condensing Engines recently erected by you for this company at our Gateshead Pumping Station, I have great pleasure in informing you that they have far surpassed my expectations, being capable of pumping 50 per cent. more water than the quantity contracted for; and by a series of experiments I find they work as economically as any other engine of the compound type, and will compare favourably with any other class of pumping engine. By the simplicity of their arrangement and superior workmanship they require very little attendance and repairs, and the pumps are quite noiseless. A short time ago I had them tried upon air by suddenly shutting off the column, and found they did not run away, thus showing the perfect controlling or governing power of the Floyd's Improved Steam-moved Reversing Valve. I will thank you to forward the other two pairs you have in hand for our Benwell Pumping Station.

(Signed)

Yours respectfully,
 JOHN R. FORSTER, Engineer.

The Chesterfield and Boythorpe Colliery Company (Limited),

Registered Office, Boythorpe, near Chesterfield, Oct. 1, 1879.

21'

36' x 12" x 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES.

Messrs. Tangye Brothers.

Supplied in January, 1878.

GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute—224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition.

Yours truly,

(Signed) M. STRAW, Manager.

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder.....In.	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder	14	14	14	18	18	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder	4	5	6	5	6	7	8	6	7	8	10	7	8	10	12
Length of stroke	24	24	24	24	24	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate	3900	6100	8800	6100	8800	12,000	15,650	8,800	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing..	360	330	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser...	480	307	213	480	333	245	187	480	352	269	173	480	367	234	162
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	600	417	306	235	600	440	337	216	600	459	203	203

CONTINUED.

Diameter of High-pressure Cylinder	16	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder	28	28	28	28	32	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder	8	10	12	14	8	10	12	14	10	12	14	10	12	14	12	14
Length of stroke	36	36	36	36	48	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate	15,650	24,450	35,225	47,950	13,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,950	35,225	47,950
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing..	360	230	160	118	456	292	202	149	397	276	202	518	360	264	562	
Ditto ditto ditto—with Holman's Condenser...	480	307	213	154	603	389	269	198	528	363	269	691	480	352	750	
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	191	750	486	337	248	660	450	337	864	600	440	937	

PRICES GIVEN ON RECEIPT OF REQUIREMENTS.

Any number of these Engines can be placed side by side, to work in conjunction or separately as desired, thereby multiplying the work of one Pump to any extent.

NORTHERN DEPOT:—TANGYE BROTHERS, ST. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE.

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FIRST-CLASS DETONATORS

MANUFACTURED FOR THE TRADE ON
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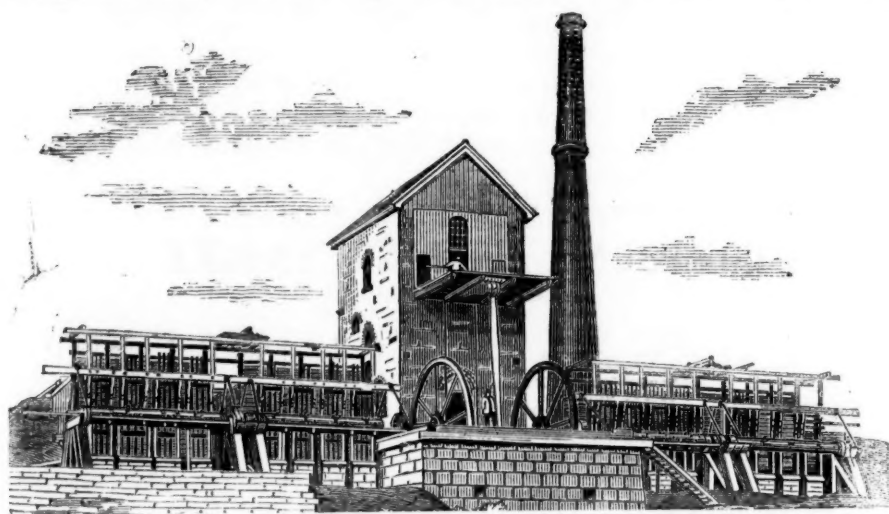
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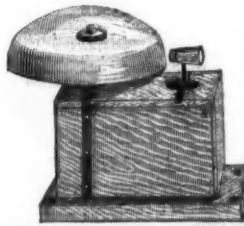


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First Prize - - - Sydney, 1879.

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PUMPING and other LAND ENGINES and MARINE STEAM ENGINES
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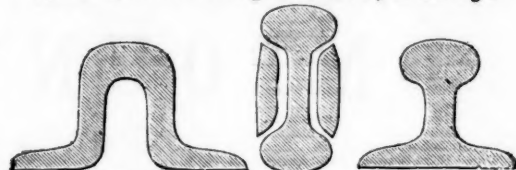
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IN GOOD CONDITION, AT MODERATE PRICES—viz.

PUMPING ENGINES; WINDING ENGINES; STAMPING ENGINES;
STEAM CAPSTANS; ORE CRUSHERS; BOILERS and PITWORK of
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IRON AND STEEL RAILS, of all sections, from 10 to 86 lbs. per
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Bolts and Nuts, Chairs, Spikes, and Points and Crossings to match, when re
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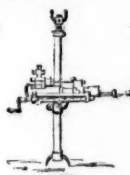
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This DRILL is of GREAT
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SECOND TO NONE IN THE
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We are prepared to SUPPLY
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STEEL TRAMS AND TIPPING TRUCKS.

STEEL (OR IRON) TRAMS AND TIPPING TRUCKS
Patented in Europe, America, and British South Africa
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BLASTING FUSE FOR MINING AND ENGINEERING
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gives correct, safe, and responsible advice as to securing full titles and possession
and, as to best mode of utilising the property, will assist in settling existing diffi-
culties by compromise, and in disposing of developed mining property when held
at real value; offers his assistance for securing undeveloped mining properties at
home prices. As to care taken in reporting, reference is made to the Mining Journal
Supplement, April 1, 1876, containing a report on property of the Maxwell Land
Grant and Railway Company; as to technical standing, to the prominent men of
the trade—compare Mining Journal of Aug. 30 and Nov. 31, 1872, and New York
Engineering and Mining Journal, Feb. 28, 1874.

Just published.

THE NORTH WALES COAL FIELD
Being a series of Diagrams showing the Depth, Thickness, and Local Names
of the Seams in the principal Collieries of the various districts, with Index, Geo-
logical Map, and horizontal sections across the Ruabon, Brynbo, Buckley, and
Mostyn districts.

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ance, and other abuses of the system.
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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.									
Shares.	Par.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.	Issue.	Shares.	Par.
3939 Blue Hills, c, St. Agnes	4 6	6 4	3 1/4	0 2	0 0	0 2	Sept. 1880	100000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0
100000 Caron, c, Cardigan	2 0	0 2	1 1/2	0 4	0 0	0 2	Oct. 1878	10000	10 0

FOREIGN DIVIDEND MINES.									
Shares.	Par.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.	Issue.	Shares.	Par.
35500 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0
130000 Almaden, Spain	2 0	0 0	1 1/2	2 2	0 0	1 3	Sept. 1880	130000	10 0

Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

Shares.	Par.	Last wk.	Clos. pr.
25600 Aberllyn, c, St. Agnes	1 0	0 0	1 1/4
12000 Asheton, c, Cardigan	5 0	0 0	1 1/4
10000 Atlantic, c, Cardigan	1 0	0 0	1 1/4
11583 Bedford Unit, c, Tavis (21 sh.)	0 6	0 0	1 1/4
25000 Belodwa, c, Roche	1 0	0 0	1 1/4
6000 Bendigaid, c, Wales	10 0	0 0	1 1/4
30000 Bettws-y-Coed, c, St. Agnes	1 0	0 0	1 1/4
8000 Bets-y-Coed, c, St. Agnes	1 0	0 0	1 1/4
30000 Bodirys, c, St. Agnes	1 0	0 0	1 1/4
800 Botallack, c, St. Agnes	31 0	0 0	1 1/4
10000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4
20000 British, c, St. Agnes	2 0	0 0	1 1/4

NON-DIVIDEND MINES—continued.

Shares.	Par.	Last wk.	Clos. pr.
35000 New Tincroft, c, Lelant	6 0	0 0	1 1/4
6000 New West Canard, c, Liskeard	0 2	0 0	1 1/4
30000 New Wheal Pevor, c, Redruth	0 10	0 0	1 1/4
35000 New Wye Valley, c, Montgomery	1 0	0 0	1 1/4
25000 North Alfred, c, Phillack	0 10	0 0	1 1/4
10000 N. D'Ereshy Mount, c, St. Agnes	1 0	0 0	1 1/4
12000 North Herodsfoot, c, Liskeard	0 5	0 0	1 1/4
2000 North Levant, c, St. Agnes	13 0	0 0	1 1/4
50000 North Molton, c, St. Agnes	1 0	0 0	1 1/4
6000 North Penryn, c, St. Agnes	1 0	0 0	1 1/4
2336 North Trekerby, c, St. Agnes	8 17	10 0	1 1/4
8000 Northern, c, St. Agnes	1 0	0 0	1 1/4
12000 Pandora, c, St. Agnes	2 0	0 0	1 1/4
11812 Pant-y-Mryn, c, St. Agnes	2 0	0 0	1 1/4
20000 Parka Mines Consols, c, St. Agnes	1 0	0 0	1 1/4
6000 Parnaby, c, St. Agnes	0 5	0 0	1 1/4
45000 Parys Corporation, c, St. Agnes	1 0	0 0	1 1/4
7500 Pateley Bridge, c, St. Agnes	1 0	0 0	1 1/4
15000 Ditto (also 7500 sh. not issued)	0 19	0 0	1 1/4
6000 Pedn-an-drea, c, Redruth	1 0	0 0	1 1/4
6000 Pendennis, c, St. Agnes	8 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4
12000 Pen-y-Ore, c, St. Agnes	1 0	0 0	1 1/4

bl, silver; c, copper; g, gold; l, lead; s, silver; sl, slate; st, steel; t, tin; z, zinc; i, iron; a, arsenic.

NON-DIVIDEND FOREIGN MINES; FOREIGN AND MISCELLANEOUS STOCKS; TRAMWAYS; INSURANCE COMPANIES; GAS, IRON AND COAL, WAGON COMPANIES, &c.

NON-DIVIDEND FOREIGN MINES.

Shares.	Par.	Last wk.	Clos. pr.
12000 Arendal, c, Norway	4 0	0 0	2 1/2
30000 Blue Bent, c, California	5 0	0 0	1 1/4
40000 Brazilian, c, Brazil	1 0	0 0	1 1/4
10000 Buena Ventura, c, Spain (22 sh.)	1 10	0 0	1 1/4
15000 Canada, c, Canada	1 0	0 0	2 1/2
82500 Canadian, c, Canada	4 0	0 0	2 1/2
34433 Cedar Creek, c, California	5 0	0 0	2 1/2
120000 Chontales, c, Nicaragua (98000 iss.)	1 0	0 0	1 1/4
150000 Colar, c, Mysore	1 0	0 0	1 1/4
75000 Colombian Hydraulic, c, Colombia	1 0	0 0	1 1/4
65000 Colorado United, c, Colorado	5 0	0 0	2 1/2
90000 Consolidated Mining	1 0	0 0	1 1/4
200000 Devala, c, Wynaad	1 0	0 0	2 1/2
100000 Don Pedro North of the Rey	1 0	0 0	1 1/4
20000 English Australian, c, Victoria	1 0	0 0	1 1/4
100000 Exchequer, c, California	1 0	0 0	1 1/4
100000 Frontenac, c, Ontario, Canada	1 0	0 0	1 1/4
10000 Hornachos, c, Spain	10 0	0 0	1 1/4
12000 Hultafelt, c, Sweden	5 0	0 0	1 1/4
100000 Ind. Glenroth, c, Wynaad (fy. pd.)	1 0	0 0	1 1/4
150000 Indian Mammoth, c, Chulmulla	0 5	0 0	1 1/4
100000 Indian Phoenix, c, Wynaad	1 0	0 0	1 1/4
100000 Isabelle, c, California	1 0	0 0	1 1/4
100000 I. L. L., c, California	1 0	0 0	1 1/4
50000 Javali, c, Nicaragua	2 0	0 0	1 1/4
50000 Kapanga, c, New Zealand	2 0	0 0	1 1/4
100000 La Plata, c, Colorado	1 0	0 0	1 1/4
65000 London and California, c, Wynaad	2 0	0 0	1 1/4
7500 Lusitania, Portugal (fy. pd.)	5 0	0 0	1 1/4
9000 Missouri, l, pref. (fully paid)	10 0	0 0	1 1/4
135000 Mysore, c, India	1 0	0 0	1 1/4
120000 Mysore Reefs, c, Madras	1 0	0 0	1 1/4
40000 Nava de Jadraque, c, Spain	1 0	0 0	1 1/4
100000 New Fronto & Boliv., c, Colombia	1 0	0 0	1 1/4
100000 New Gold Run, c, Colombia	1 0	0 0	1 1/4
200000 Nouv. Monde, c, Venez. (en com.)	1 0	0 0	1 1/4
80000 Pasternus, c, Italy	3 0	0 0	1 1/4
80000 Pierrefort, c, Wynaad	1 0	0 0	1 1/4
25000 Placerville, c, California	2 0	0 0	1 1/4
40000 Ravenscroft, c, Zind	2 0	0 0	1 1/4
8500 Rio Grande do Sul, c, Brazil (21 sh.)	5 0	0 0	1 1/4
100000 Rosa Grande, c, Brazil (21 sh.)	1 0	0 0	1 1/4
25300 Ruby and Dunderberg, c, Nevada	10 0	0 0	1 1/4
34022 San Pedro, c, Chile	1 12	0 0	1 1/4
100000 So. Indian, c, Madras (fully paid)	1 0	0 0	1 1/4
100000 South-East Wynaad, c, India	1 0	0 0	1 1/4
43174 United Mexican, c, Mexico	29 5	0 0	1 1/4
50000 Virneberg, c, Rheinisch, Ger.	2 0	0 0	1 1/4
75000 Yorke Peninsula, c, So. Australia	1 0	0 0	1 1/4
64800 Yorke Pen., c, South Aust. Pref.	1 0	0 0	1 1/4

GAS COMPANIES.

Issue.	Shares.	Par.	Clos. pr.
50000	5	0 0	15 1/2
100000	5	0 0	5 1/2
100000	5	0 0	1 1/2
29700	Stk.	Brentford Consolidated	100 152 1/2
14000	Stk.	British	100 32 3/4
50000	Stk.	Commercial	100 187 1/2
20000	Stk.	Continental Union (L)	100 20 1/2
20000	Stk.	Do. do. New, 1880	100 24 1/2
10000	Stk.	Do. do. 7 per cent. Preference	100 24 1/2
23400	Stk.	European (L)	100 19 20
94850	Stk.	Gaslight and Coke, A. Ord.	100 177 1/2
50000	Stk.	Do. 4th issue	100 17 1/2
50000	Stk.	Do. 5th issue	100 17 1/2
84200	Stk.	Do. 4 per cent. Deb. Stock	100 103 1/2
50000	Stk.	Hong Kong and China	100 145 1/2
200000	Stk.	Imperial Continental	100 187 1/2
385000	Stk.	London	100 187 1/2
12000	Stk.	Malta & Mediterranean (L)	100 2 1/2
100000	Stk.	Metrop. of Melbourne 6 p.c. Deb.	100 103 1/2
25000	Stk.	Monte Video (L)	100 17 1/2
10000	Stk.	Ottoman (L)	100 2 1/2
30000	Stk.	Oriental (L)	100 7 1/2
27500	Stk.	Rio de Janeiro (L)	100 24 1/2
60000	Stk.	South Metropolitan (L)	100 202 1/2
50000	Stk.	Ditto, do.	100 178 1/2

INSURANCE COMPANIES.

Issue.	Shares.	Par.	Clos. pr.
50000	10	0 0	35 3/8
100000	10	0 0	28 3/8
50000	30	0 0	17 1/2
50000	50	0 0	20 21 pm
50000	50	0 0	5 1/2
27500	10	0 0	22 24
13453	10	0 0	108 108
100000	10	0 0	2 3/4
49626	20	0 0	64 66
35892	20	0 0	2 3/4
40000	25	0 0	3 1/4
50000	20	0 0	2 3/4
100000	10	0 0	92 96
50000	10	0 0	1 1/4
50000	10	0 0	2 3/4
40000	50	0 0	5 1/2
40000	50	0 0	55 56
40000	25	0 0	2 3/4
200000	10	0 0	2 3/4
100000	10	0 0	2 3/4
200000	5	0 0	8 1/2
125000	10	0 0	2 3/4
40000	20	0 0	1 1/2
10000	20	0 0	9 1/2
10000	20	0 0	2 3/4
10000	20	0 0	2 3/4
10000	20	0 0	2 3/4
10000	20	0 0	2 3/4
10000	20	0 0	2 3/4
10000	20	0 0	2 3/4
10000	20	0 0	2 3/4

BANKS.

Issue.	Shares.	Par.	Clos. pr.
100000	10	0 0	10 1/2
80000	20	0 0	27 28
30000	40	0 0	77 79
12500	40	0 0	17 1/2
20600	50	0 0	56 58
10000	25	0 0	29 31
50000	20	0 0	57 59
100000	10	0 0	22 23
25000	25	0 0	42 43
20000	50	0 0	36 38
40000	20	0 0	22 23
20000	20	0 0	21 22
30000	10	0 0	60 62
50000	20	0 0	1 1/2
80000	25	0 0	1 1/2
50000	10	0 0	6 1/2
20000	20	0 0	20 21
100000	10	0 0	3 1/2
12500	10	0 0	9 1/2
34000	10	0 0	25 26
50000	25	0 0	58 57

FOREIGN AND MISCELLANEOUS STOCKS.

	Closing prices.
Argentina, 1868, 6 per cent.	98 97
Bolivia, remnants.....	23 24
Brazilian, 1865, 5 per cent.	97 99 3/4
Chilian, 1866, 7 per cent.	102 104
City of Melbourne, 5 per cent., 1896-1907.....	106 108
City of Ottawa, 6 per cent. Sterling.....	111 113
City of Providence, 5 per cent. coupon bonds.....	108 110
City of Quebec 6 p. cent. Con. Fed. Stg. Bonds.....	112 114
City of Toronto, 5 p. ct. Stg. Bnds, 1897-1904.....	115 116
Egyptian Government pref. 8 per cent.	94 94 1/2
Ditto, United Debt.....	69 70
Ditto, 7 per cent. V.M.L.	—
Ditto, K. Daira Sanieh	74 75
Ditto, Daria Khassa	—
Foreign and Colonial Gov. Trust, preferred	112 114
Ditto, 5 per cent., deferred	118 119
Peru, 1871, 5 per cent.	19 20
Ditto, 1872, 5 per cent.	17 17 1/2
Russian, 5 1/2 per cent. L. Mort.	—
Spanish, Quicksilver, Mort. 5 per cent.	102 104
United States Mort. 6 per cent.	102 106